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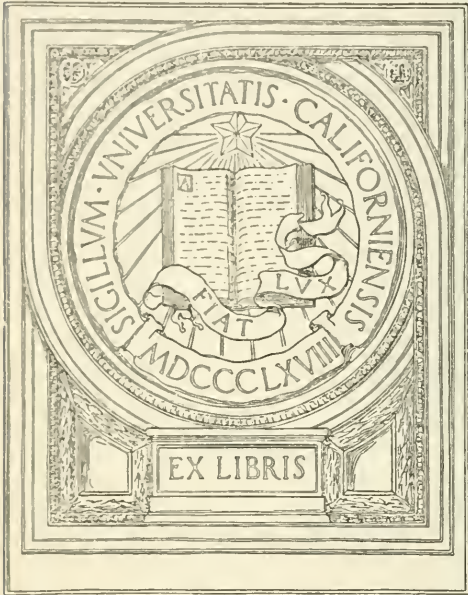


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STUDIES IN MEXICAN RESEARCH



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METHODS AND RESULTS  
IN  
MEXICAN RESEARCH

BY

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Originally published in the  
*Archiv für Anthropologie*  
Vol. VI, 1907, p. 113-168

Translated from the German with kind  
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BY

SEYMOUR DE RICCI

PARIS, JUNE MCMIX

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# METHODS AND RESULTS IN MEXICAN RESEARCH

BY

DR. WALTER LEHMANN

*Respectfully and gratefully dedicated  
to Professor Dr. Eduard Seler.*

JUL 25 1938

I.

## INTRODUCTION

Verden

In every branch of science it is a useful thing to stop from time to time and look backwards over the fields already covered by research, to sum up the ascertained results and to endeavour to deduce from them the immediate prospects of future work.

“Mexican Research” means the study of Mexico, both land and inhabitants, throughout the various periods of the world’s history. It can not be kept apart from the study of the neighbouring countries of North, Central and South America; it is closely connected with all studies relating to the *Homo Americanus*, and, finally, it is an important chapter in the history of mankind’s origin and gradual progress.

(1) For Indian words I have adopted the Spanish spelling: *c* before *a* and *o* = *k*; before *e* and *i* = *ç*; *ch* = *tch*; *x* in Mexican is some thing between French *ch* and Italian *ss*; the *Letras heridas* peculiar to the Maya languages and noted by <sup>1</sup> are to be pronounced by opening and closing simultaneously the mouth and the palate.

No special branch of Mexican research is entitled to claim precedence. In a problem relating to a number of unknown quantities, we must make use of every possible source of information. Neither Anthropology (1) nor Linguistics (2), nor Ethnology, nor Mythology can by themselves and taken separately, tell us whence came the Mexicans and their civilisation, or in what relation the Mexicans stand to other nations of the Old and New World: one branch of research must be used to complete another.

On the other hand, the evidence of history and tradition must be carefully sifted, if we wish to bring them in concordance with the results of archæology. And, as man always remains under the direct influence of climate and soil, of fauna and flora, and of their various changes, it will be advisable to keep in mind the teachings of climatology, geology, botany and zoology, and more especially all that may concern palæontology and the geographical distribution of animals and plants.

In spite of the variety of all these sources of information, in spite of the tremendous amount of documents already collected, we find so many errors prevailing, so much incertitude, such a number of prejudiced views, that we must take it as a warning to be modest and prudent in our assertions.

It would be premature to attempt in the following work anything like a final answer to any of the questions discussed. It can hardly be too often repeated that the study of historic and prehistoric Mexico is still in its cradle; that it is necessary first of all to do away with a

<sup>1</sup> It would be difficult not to agree with the principles laid down by Ehrenreich, "Archiv für Anthropologie," new series, vol. iii., pp. 40-42.

<sup>2</sup> The value of linguistics was distinctly overrated by D. G. Brinton when he stated that "The linguistic is the only basis on which the subdivision of the race should proceed" (cf. "American Race," New York, 1891, p. 57).

number of current errors, and that what remains afterwards of well-ascertained fact is absolutely insufficient to give anything like a connected view of the former state of things in Mexico.

Indeed, *that* will be impossible as long as systematic excavations are not made throughout the country. The whole land teems with antiquities. In former times archæologists were satisfied with picking up potsherds and terra-cotta figures, without any heed as to their actual provenance. The word *Mexico* on a label appeared to be more than enough. It was only later on that travellers began to note down carefully the place where every object was found, and gave us by this means the possibility of classifying types according to localities. I may quote here, among others, the names of Désiré Charnay, Alphonse Pinart, Hermann Strebel, Eduard Seler and Alfredo Chavero (1). Seler, for instance, has been enabled, in the course of his numerous and extensive travels, to define a number of well-marked local types, the spreading of which is not without importance for commercial history.

Quite recently, the great excavations made at the expense of the Mexican Government by Leopoldo Batres, round the pyramids of Teotihuacan (2), have not only con-

(1) Cf. Hermann Strebel, "Archäologische Beiträge" (Hamburg, 1885, 2 vol. in-8) and "Ueber Ornamente auf Tongefäßen aus Altmexiko" (Hamburg and Leipzig, 1904, in-1, with 33 plates). E. Seler, "Die archäologischen Ergebnisse meiner ersten mexikanischen Reise" in his "Gesammelte Abhandlungen," vol. ii. (Berlin, 1904), pp. 289-367, and his "Reisebriefe aus Mexiko" (Berlin, 1889, in-8), *passim*. The collections of Charnay and Pinart have been carefully arranged by E. T. Hamy, in the Musée du Trocadéro at Paris. In the Berlin Museum are brought together the old collection of Uhde, and the numerous objects brought back by Strebel and Seler. The Museo Nacional of the city of Mexico owes much to the persistent researches of the late Alfredo Chavero.

(2) Leopold Batres, "Teotihuacan, memoria que presenta... al XV. Congr. Int. de Americanistas" (Mexico, 1906, in-8), 42 plates and 2 maps. Part of the "bronzed" earthenware pots on the 10 plates of the Appendix are doubtless forgeries.

firmed many assertions of the early authors, but also brought to light a considerable amount of archæological material. But hardly anywhere have the various layers been examined in a satisfactory way, though, of course, such systematic excavations would be of the highest importance. What may we *not* expect from the great ruins of Tula, Xochicalco, Cholula, Palenque and Ocosingo? Let us hope at least that Batres' excavations at Teotihuacan will be carried out in a truly scientific spirit, and that he will be able to clear up the mysterious origin of these stately monuments of an unknown race.

A remarkable fact is that, throughout Mexico, the only civilisation of which we find traces is a highly perfected one, and that the local types and occasional rough products of country workshops are quite clearly the offspring of the refined art then in sway at Mexico, Tetzoco, Cholula and other great cities; we fail on the other hand to discover any of the rougher archaic works which must have existed, and, further, we can trace as yet no transitional stage between archaism and the final form of Mexican art.

Such a development can hardly have taken place in the few short centuries elapsed between the legendary arrival of the Mexicans from their first home, Aztlan-Chicomoztoc (A.D. 1061) — or, let us say, the foundation of Mexico-Tenochtitlan (A.D. 1325) — and the Spanish conquest. It seems highly probable that the Mexicans and the closely related Nahua tribes entered the land later than the other inhabitants of the country, but nevertheless at a date already forgotten in the days of the *Conquista*. So there must exist, buried somewhere or other, remains of the original earlier civilisation. Teobert Maler<sup>1)</sup>, for in-

<sup>1)</sup> Cf. Teobert Maler, "Globus," vol. 82, p. 225, and W. H. Holmes, "Archæological Researches, Field Columbia Museum Anthr.," vol. i., pp. 106-109 (on constructions of different periods at Chichen-Itza).

stance, in the course of his admirable surveys of Guatemala and Yucatan, has detected in the latter country remains of a very early date: he speaks more than once of ruins built above earlier ones.

What a pity that *not one* of the great ruined Maya cities has yet been systematically excavated. From the extensive researches of Maler and others, we may now glean a very fair opinion of Maya art and architecture, but it may be believed that the methodical and exhaustive excavation of a single site would have taught us far more about the early history of Mexico and of Central America.

It is very likely that we may find in Mexico a state of things similar to that revealed in Peru by Uhle's latest discoveries of early potsherds in the rubbish heaps at Ancon <sup>(1)</sup>.

As long as proper archæological investigations have not been made and the results published, it will be quite out of the question to attempt even a rough sketch of prehistoric Mexico, and, until then, *nothing really certain* will be known about the early-tribe wanderings and the origin of the Mexican race. It was necessary to state this clearly beforehand, in order to avoid repeating at every page how little we know in practically every branch of our speciality.

Let us now examine the bibliography of our subject and enumerate rapidly our chief sources of information.

(1) Cf. Uhle, "Bericht über die Ergebnisse meiner südamerikanischen Reisen" in the Comptes-rendus of the Fourteenth International Congress of Americanists (Stuttgart, 1906), vol. ii., pp. 578-579, pl. xviii.-xx.

## II.

### BIBLIOGRAPHY.

There are quite a number of bibliographical works referring either to America generally, or more specially to Mexico. Without mentioning all the Spanish authors of the last four centuries, who have prefixed to their books, more or less complete lists of sources, we must quote as of fundamental importance the works of Antonio de Leon y Pinelo (1629) <sup>(1)</sup>, of Eguiara y Eguren (1755) <sup>(2)</sup>, and of Beristain y Sousa (1816-1821) <sup>(3)</sup>, these being very reliable and mentioning a number of rare books and manuscripts, some of which are only known through their descriptions. Most of the later bibliographies are derived from them; among modern works, are of especial importance those of Joaquin Garcia Icazbalceta (1886) <sup>(4)</sup>, (with additions by Nicolas

(1) Antonio de Leon y Pinelo, "Epitome de la Biblioteca Oriental i Occidental, Náutica y Geografica," (Madrid, 1629, in-4), with a second edition by Andrés Gonzalez de Barcia (Madrid, 1737-1738, 3 vol., in-fol.).

(2) J. Eguiara y Eguren, "Bibliotheca Mexicana sive eruditorum historia virorum qui in America Boreali nati vel alibi geniti in ipsam domicilio aut studiis asciti, quavis lingua scripto aliquid tradiderunt." Vol. I (Mexico, 1755), in-fol.) contain letters A to C. Further portions exist in manuscript.

(3) Beristain y Sousa, "Bibliotheca Hispano-Americana Septentrional," (Mexico, 1816-1821, 3 vols. in-fol.); a second edition (inaccurate) was published at Amecameca, 1883, 4 vols. in-8.

(4) Joaquin Garcia Icazbalceta, "Bibliografia Mexicana del siglo XVI." Part i (Mexico, 1886, in-4), with an index by Catharine A. Janvier.

Léon <sup>(1)</sup>, Vicente de P. Andrade (1899) <sup>(2)</sup> and P. A. Gerste <sup>(3)</sup>, in which XVIth, XVIIth and XIXth century are fully treated. Here must also be mentioned the bibliographical contributions of Ad. F. Bandelier (1880) <sup>(4)</sup>, Beauvois (1899) <sup>(5)</sup>, and Léon Lejeal (1902) <sup>(6)</sup>.

The field of linguistics is covered by the works of D. Lorenzo Hervás (1784) <sup>(7)</sup>, Johann Severin Vater (1815) <sup>(8)</sup>, Constantine Samuel Rafinesque (1832-1833) <sup>(9)</sup>, H. E. Ludewig (1858) <sup>(10)</sup>, E. G. Squier (1861) <sup>(11)</sup>, José Guadalupe Romero (1860) <sup>(12)</sup>, by a highly rewarded

(1) Nicolas Léon, "Adiciones à la Bibliografía Mexicana del siglo XVI, in the "Boletín del Instituto Bibliográfico Mexicano," part i (1902) p. 43 seqq. and "La Bibliografía in México en el siglo XIX, *ibid.*, part iii (1902), p. 55-66.

(2) Vicente de Paul Andrade, "Ensayo Bibliográfico Mexicano del siglo XVII," 2nd edition (Mexico, 1900, in-4). The first edition in the "Memorias de la Soc. *Atzteca*" was never completed.

(3) P. A. Gerste (S. J.), "Archéologie et bibliographie mexicaines."

(4) Ad. F. Bandelier, "Notes on the bibliography of Yucatan and Central America," (Worcester, 1881, in-8).

(5) Beauvois, "Les publications relatives à l'ancien Mexique depuis une trentaine d'années," (Paris, 1899, in-8).

(6) Léon Lejeal, "Les antiquités mexicaines," (Paris, 1902, in-8), forming part 19 of the "Bibliothèque de bibliographies critiques publiée par la Société des études historiques."

(7) D. Lorenzo Hervás, "Catalogo delle lingue conosciute et notizia della loro affinità e diversità" (Cesena, 1784, and in Spanish, Madrid, 1800).

(8) Joh. Severin Vater, "Linguarum totius orbis index alphabeticus." (Berlin, 1815), and second edition by B. Jülg (Berlin, 1847).

(9) Constantine Samuel Rafinesque, "Atlantic Journal and Friend of Knowledge," 8 numbers with numerous vocabularies (Philadelphia, 1832-1833).

(10) H. E. Ludewig, "The literature of American aboriginal languages," (London, Trübner, 1858, in-8), published by W. M. Turner. Cf. Nic. Trübner, "Bibliographical guide to American literature," (London, 1859; "American and Oriental Record," November 1861 (n. 51); November 1869; 1884, p. 80; new series, vol. v, nos. 7-8).

(11) E. G. Squier, "Monograph of authors who have written on the languages of Central America," (Albany, 1861).

(12) José Guadalupe Romero, "Noticia de las personas que han escrito algunas obras sobre idiomas que se hablan en la República," (Mexico, 1861); cf. cf. Bolet. "Soc. Mex. de Geogr. y Estadist." Mexico, 1860, p. 374-386.

memoir from the pen of Conde de la Viñaza (1892) <sup>(1)</sup> and by Brinton's posthumous paper (1900) on the Berendt collection, bought by him for the Philadelphia museum <sup>(2)</sup>. Much useful information may be derived from the catalogues of the libraries having belonged to various well-known specialists, such as José Maria Andrade <sup>(3)</sup>, Brasseur de Bourbourg <sup>(4)</sup>, Alphonse Pinart <sup>(5)</sup>, José Fernandez Ramirez <sup>(6)</sup>, Ant. Peñafiel <sup>(7)</sup>, and Eugène Goupil <sup>(8)</sup>; the same may be said of the various books published under the title of *Bibliotheca Americana* by HARRISSE, Leclerc, Robert Clarke & Co. <sup>(9)</sup>; of Rich's *Bibliotheca Americana nova* <sup>(10)</sup>; of the similar

(1) Conde de la Viñaza, "Bibliografía española de lenguas indígenas de América," (Madrid, 1892, in-8).

(2) D. G. Brinton, "Catalogue of the Berendt linguistic collection" in the "Bulletin of the Free Museum of Science and Art, Department of Archaeology and Palaeontology, University of Pennsylvania," vol. ii part 4 (May, 1900), p. 203-234. Brinton has published only a very small portion of this exceedingly valuable collection of drawings, copies and original manuscripts, collected by Berendt (1817-1878) in Central America and now preserved in the Library of the Free Museum of Science and Art, attached to the University of Pennsylvania at Philadelphia. The most important of all the documents is a clean copy of the great Maya Motul dictionary (1565). Even the catalogue only appeared after Brinton's death.

(3) "Catalogue de la riche bibliothèque de José Maria Andrade" (Leipzig and Paris, 1869, in-8).

(4) Ch. E. Brasseur de Bourbourg, "Bibliothèque mexico-guatémaliennne," (Paris, 1871, in-8).

(5) Alph. Pinart, "Catalogue de livres rares et précieux, manuscrits et imprimés," (Paris, 1883, in-8).

(6) José Fern. Ramirez, "Bibliotheca Mexicana," (London, 1880, in-8).

(7) Ant. Peñafiel, "Libros mexicanos antiguos y modernos. Catálogo descript. de la bibl. del Dr. Peñafiel," ms. ined., 1886.

(8) "Catalogue de la bibliothèque américaine de feu E. Eugène Goupil," (Paris, 1899, in-8).

(9) H. HARRISSE, "Bibliotheca Americana vetustissima," 1492-1551 (New York, 1866, in-4), with a supplement (Paris, 1872, in-4) — Ch. Leclerc, "Bibliotheca americana" (Paris, 1878, in-8), with supplements (1881 and 1887. — Rob. Clarke, "Bibliotheca Americana" (Cincinnati, 1883, in-8), describing 6589 nos.

(10) Rich, "Bibliotheca Americana nova," (London and New York, 1835-1844), begins at the year 1700.



works compiled by Ternaux-Compans <sup>(1)</sup>, Joseph Sabin <sup>(2)</sup> and Bernard Quaritch <sup>(3)</sup>; and of various special book-seller's catalogues, such as those of Hiersemann in Leipzig, Chadenat, Maisonneuve and Picard in Paris, Murillo and Junquera in Madrid, Quaritch in London.

Finally we must give a place in our lists to Nicolas Antonio's valuable *Bibliotheca Hispana Nova* (1672) <sup>(4)</sup>, and to the very useful bibliographies issued at various times, of the writers belonging to some particular religious order <sup>(5)</sup>; individual bibliographies of the works of various modern authors are too numerous to be quoted here, but it may be worth while mentioning the existence for the last few years, in Mexico, of a special periodical, the *Bulletin del Instituto Bibliografico Mexicano*.

(1) H. Ternaux-Compans, "Bibliothèque Américaine" (Paris, 1837, in-8).

(2) Joseph Sabin, "A Dictionary of books relating to America" (New York, 1880), parts 60-70.

(3) Bernard Quaritch, "Catalogue of the history, geography and of the philology of America" (London, 1885, in-8). Cf. also "Biblioteca mejicana, a catalogue of an extraordinary collection of books and manuscripts" (London, 1869, in-4) (Fischer's library).

(4) Nicolas Antonio, "Bibliotheca hispana nova" (Rome, 1672, in-fol.) and second edition (Madrid, 1733-1738, in-fol.).

(5) Cf. for instance Alegambe, "Bibliotheca scriptorum Societatis Jesu" (Antwerp, 1643) (*vide* Ribadeneira), continued to 1675 by Nathanael Sotwell, but completely superseded by the magnificent work of Auguste de Backer and Charles Sommervogel, "Bibliothèque des écrivains de la compagnie de Jésus" (Louvain, 1876, and foll.). Ambrosius de Altamura, "Bibliotheca Dominicana" (Rome, 1677) or better Jacobus Quetif, "Scriptores ordinis Praedicatorum recensiti, notisque historicis et criticis illustrati," completed by Jacobus Echard (Paris, 1721, in-fol.). Wadding and Sbaralea, "Scriptores ordinis Minorum," of which the geographical portion has been well rewritten by Marcellino da Civezza, "Saggio de bibliografia geografica, storica, etnografica sanfrancescana."

### III.

#### SOURCES.

Our sources of information on the early history and civilisation of Mexico may be roughly classified under the four following divisions:—

1. Original Mexican picture-manuscripts and historical monuments;

2. Documents written in the Mexican languages with European letters or translated directly into Spanish from original Mexican texts;

3. Works of the Spanish *conquistadores* or of the numerous Spanish priests and missionaries, from the XVIth to the XVIIIth century;

4. Works of various travellers, historians and archeologists beginning with the first scientific traveller Alexander von Humboldt and with the founder of Mexican archæology Leon y Gama.

#### I.

##### ORIGINAL MEXICAN PICTURE-MANUSCRIPTS AND HISTORICAL MONUMENTS.

Like several other nations of Central America, such as the Mixtecs and Tzapotecs (1), such as the Mayas of

(1) I have published in the "Journal de la Société des Américanistes," new series, vol. ii. (1905), pp. 3-42, a list of all extant Mixteco-Tzapotec manuscripts.

Yucatan and Guatemala, the Mexican tribes made use of a hieroglyphic script which enabled them to retrace in rebus the succession of historical events, with the help of an elaborate calendar. Unfortunately, of these priceless records but few fragments have survived, these being nearly all of Mexican origin. As far back as the reign of the fourth King Itzcouatl (1427-1440) we find mentions of such documents being destroyed (1), but it is only in the time of the Spanish conquest that they were disposed of in large quantities; the whole archives of Tetzoco having been for instance ruthlessly burnt by the kindest of men, Zumárraga, the first Bishop of Mexico.

The picture manuscripts professed to give an account of the early home of the Mexican race, of their wanderings from place to place, of their arrival on the shores of the lake, close to which Mexico now stands, of the chronological succession of their kings, of their conquests and of other noteworthy events. Similar documents must have been drawn up in the smaller states, even in those not of a direct Aztec origin, and particular texts related the history of the various cities; but nothing appears to have survived about the Toltecs, in spite of all their renown.

Most of these Mexican chronicles agree fairly well with one another, and form a compact group to which belong the *Codex Boturini* (2), the *Codex Aubin 1576* (3), the *Mapa de Sigüenza* (4), the *Mapa de Tepechpan* (5), and

(1) Cf. Sahagun, "Hist. de Nuev. España," book x., chapter 29.

(2) *Codex Boturini* in Lord Kingsborough's "Mexican Antiquities" (London, 1831-1838, in-fol.), vol. i., no. 3.

(3) E. Boban, "Histoire de la nation mexicaine depuis le départ d'Azilan jusqu'à l'arrivée des conquérants espagnols (et au delà de 1607). Ms. figuratif accompagné du texte en langue nahuatl. . . . Reproduction du codex de 1576" (Paris, 1893, in-8). [The original MS. has been found in 1908 in the British Museum by S. de Ricci.]

(4) The *Mapa de Sigüenza*, first given by Gemelli Carreri in his "Giro del mondo," vol. vi. (Napoli, 1700, in-12), has been several times re-edited, but not with sufficient accuracy, by A. von Hum-

similar documents; others show considerable chronological discrepancies; their historical value was in consequence greatly underrated by Gallatin, though, on the whole, it is hardly to be denied.

Unfortunately, the documents are not numerous enough, to allow of a critical study of Mexican chronology and, on the other hand, they only reach back a very few centuries; it is but in A.D. 1325 that the mythical period really comes to an end. It would be worth while examining, how far the *Codex Xolotl* and the other closely connected picture-manuscripts in Paris, from which Ixtlilxochitl wrote his *Historia Chichimeca*, agree or disagree with the above described

boldt, "Vues des Cordillères" Paris, 1810), Atlas, pl. xxxii., by Kingsborough, "Mexican Antiquities," vol. iv., and by Jos. Fernandez Ramirez, in the "Atlas geografico, historico y estadistico de la Republ. Mex., publ. por Ant. Garcia Cubas" (Mexico, 1858), entrega 29.

(5) "Mapa de Tepechpan, histoire synchronique et seigneuriale de Tepechpan et de Mexico, 1298-1596," published by A. Aubin (Paris, 1851, in-fol.) lithographed by J. Desportes)

(6) A close parallel to the Bourini codex is to be found in the Mexican MSS. 59-64 of the Paris Bibliothèque nationale, which contains an "Histoire Mexicaine" made use of by Seler ("Gesammelte Abhandlungen," ii., pp. 36-37), and reproduced in photographs with many other interesting documents in the Atlas to Eugène Boban's "Documents pour servir à l'histoire du Mexique" (Paris, 1891).

(7) The *Codex Xolotl* is photographically reproduced in Boban's "Atlas," pl. i.-xx., but the facsimile is not very legible. The manuscript itself contains a number of glosses in the Mexican language. I was fortunate enough to discover in Paris, in 1906, a hitherto unobserved leaf of the "codex" which had got stuck to the binding. A new study of this valuable document might prove of great historical importance.

(8) Such as the "Mapa Tlotzin" and the "Mapa Quinatzin," *Histoire du royaume d'Acolhuacan ou de Tezcucou*, first described and published by Aubin, "Mémoire sur la peinture didactique et l'écriture figurative des anciens Mexicains" (Paris, 1849), and republished by E. T. Hamy, "Mission scientifique au Mexique et dans l'Amérique centrale" (Paris, 1885, in-4, xi.-106 pp., 5 pl.). Cf. also Aubin, "Anciennes peintures figuratives du Mexique" in "Arch. Soc. Amér. de France," new series, i. (1875), pp. 283-295, pl. ix.-xviii., and Boban's "Atlas," pl. xi., xii. and xiii.

(9) Published by Alfredo Chavero (Mexico, 1892, in-8).

documents. But such a study is still to be made and further I have reasons to believe that the codex Xolotl is not an original, but only a very good copy, made at the time of the *Conquista*. The chronological sequence of the leaves has been apparently tampered with and the present form of the manuscript is no more that of a folding screen (as is the case with other Mexican manuscripts, but that of a modern European book <sup>1</sup>).

The most important of the other historical manuscripts, are only preserved in copies, such as *Codex Mendoza* <sup>2</sup>), *Codex Telleriano-Remensis* <sup>3</sup>), and *Codex Vaticanus 3738*, also called *Codex Vaticanus A* <sup>4</sup>).

Other documents of historical interest exist in the shape of numerous *titulos de tierras*, estate books, parish registers, tribute lists and tax reports, lists of names, maps and plans, genealogies, legal papers and many others <sup>5</sup>). Most of the above are unfortunately later

(1) Cf. my note in the "Journal de la Société des Américanistes," new series, vol. iii. (1906), part i., pp. 145-146.

(2) *Codex Mendoza*, of which the first part only is of a historical character, is published in Kingsborough, vol. i., no. 1, the earlier editions of Purchas (1625) and Thevenet (1696) being mere bibliographical curiosities. The historical portion has been given, reproduced on a smaller scale, by Orozco y Berra, as an appendix to a lengthy memoir in the "Anales del Museo Nacional de Mexico," vols. i.-ii. (Mexico, 1877-1882).

(3) A von Humboldt was the first to recognize the importance of *Codex Telleriano-Remensis*; it was only recently published by the Duke of Loubat (Paris, 1899) with an introduction from the pen of E. T. Hamy.

(4) *Codex Vaticanus 3738*, which is the only one to contain the book of Tollan, has been published in facsimile, as most of the Mexican manuscripts by the Duke of Loubat (Rome, 1900).

(5) It is impossible to give here a full list of all these documents. Of peculiar importance is the "Libros de tributos" first engraved in Archbishop Lorenzana's edition of Cortés' letter (1777) and recently published with admirable accuracy by Ant. Peñafiel, "Monumentos del arte antiguo mexicano," Atlas, vol. ii., pl. 228-259, and, for the Spanish interpretation, text, chap. xiv., pp. 72-78. Other similar texts may be found in Boban's "Atlas." There are also common-books ("Altepeamatl") of Cempoallan, Ocoyacac, etc.

Several documents preserved in the Royal Library at Berlin have been published by Seler, "Gesammelte Abhandlungen" (Berlin,

than the *Conquista* and a number of the more recent ones are of very little interest; but, on the whole, most of them are of value, if only from a local point of view. Great quantities of these documents, many of which contain not only pictures and hieroglyphics, but also interpretations are preserved in the Archives at Sevilla <sup>(6)</sup>, where they have been brought from Simancas and others must still lie hidden in more than one Mexican parish house (*Cabildo*).

Historical monuments on stone are rarer even than the painted manuscripts, and the information they give reaches seldom beyond a mere date, with at the most a couple of additional remarks.

The Chimalli stone of Cuernavaca <sup>(7)</sup> (Quauhnahuac) bears the emblem of the God Xipe and the date: *yei calli macuilli olin* "third house, fifth move," (i.e. A.D. 1469) evidently referring to King Axayacatl's accession to the throne. The *Piedra de los Gigantes*, near Escamela, in the neighbourhood of Orizaba, shows a grotesque human figure and the date *10 tochtli, 1 cipactli* "ten rabbit, one crocodile," which Brinton has endeavoured <sup>(8)</sup> to connect with the death of King Ahuitzotl in February 1502. A much smaller stone in the Museo Nacional at Mexico, with the date *3 tecpatl, 12 cuetzpalin* is doubtless historical, but it is not clear to what event it refers <sup>(9)</sup>.

1902), vol. i, pp. 192-300, and by W. Lehmann, *Comptes-rendus of the Fourteenth International Congress of Americanists* (Stuttgart, 1906), vol. ii., pp. 321-344).

(6) Cf. for instance Pedro Torres Lanzas, "Relacion descriptiva de los Mapas, Planos... de Mexico y Floridas existentes en el Archivo general de Indias," vol. i-ii (Sevilla, 1900, in-8) and especially vol. i, n. 9, 10-34, etc. Cf. also "Lista de los objetos que comprende la Exposicion Americanista," (Madrid, 1881, in-8), part ii, n. 274-279, n. 373 seqq., etc.

(7) Seler, "Gesammelte Abhandlungen," vol. ii, pp. 164-166.

(8) Cf. Brinton, "Essays of an Americanist," (Philadelphia, 1896), p. 274-283; Dupaix, "Antiquités mexicaines," 1<sup>re</sup> expédition, p. 7, pl. vi-vii, fig. 6-7.

(9) Published in the "Añales del Museo Nacional de Mexico, 2<sup>a</sup> Epoca," vol. i, p. 213.

The splendid relief with the dates *8 acatl* (eighth reed) and *7 acatl* (seventh reed) is of great importance: José Fernandez Ramirez and Orozco y Berra <sup>(1)</sup> had already recognized that the first date referred to the year 1487 and to the reconstruction of the great temple at Mexico begun by King Ahuitzotl and completed in the second year of King Motecuçoma I (1487). The second date (A.D. 1477), has been rightly referred by Seler <sup>(2)</sup> to the beginning of this rebuilding.

I have some doubts as to the historical nature of a polished obsidian palette in the Musée du Trocadéro, bearing, according to E. T. Hamy <sup>(3)</sup>, the date *4 acatl, 9 panquetzaliztli*; I can not agree with this reading of the month's name.

The great votive stone erected by King Tizoc (1482-1486), as the last stone of the newly rebuilt temple of Mexico, is of great importance, although it does not bear a date. It gives in hieroglyphics the names of all the places which were at that date under the domination of the Mexican god Uitzilopochtli <sup>(4)</sup>.

Other historical monuments, such as the figure of King Motecuçoma I, described by Tezozomoc <sup>(5)</sup>, as formerly carved on the rocks of Chapultepec, seem to have been destroyed.

To a different class of texts belong the far more numerous calendar dates, referring to the sacred year of 260 days and to the special divinities of each particular day. Among the latter are the dates on the frieze of the

(1) Cf. "Añales del Museo Nacional de Mexico," vol. i, p. 60-65 and 2<sup>a</sup> Epoca, vol. i, p. 214.

(2) Seler, "Gesammelte Abhandlungen," vol. ii, p. 765-766.

(3) E. T. Hamy, "Revue d'ethnographie," vol. ii (1883), p. 193-202.

(4) "Añales del Museo Nacional de Mexico," vol. i, p. 46, plate; Ant. Peñafiel, "Monumentos," Atlas ii, pl. 170-211.

(5) Hernando Alvarado Tezozomoc, "Cronica mexicana," edid. Orozco y Berra (Mexico, 1878, in-4), § 102, p. 667.

Nochicalco pyramid <sup>(1)</sup>, and those on the Piedra Seler <sup>(2)</sup> with a peculiar notation of the various days; also the inscribed pillars of Monte Alban at Oaxaca <sup>(3)</sup> and a number of Tzapotec gravestones <sup>(4)</sup>. A peculiar monument of a different style is a relief from Chapultepec <sup>(5)</sup>. A similar explanation may be claimed for the dates in the wall paintings at Mitla <sup>(6)</sup>, and for those on the great stone tablets of Santa Lucia Cozumalhuapa <sup>(7)</sup>, and Palo Verde <sup>(8)</sup> in Guatemala, near the Pacific Ocean. The last named monuments may probably be ascribed to the Pipil Indians, a Mexican-speaking Nahua tribe, whose first home may well have been Cholula.

I feel no doubts that a number of the Maya reliefs and inscriptions are intended to commemorate historical events, particularly the scenes wherein a number of men in humble attitude, often loaded with chains, approach the Maya ruler. Each of these figures is apparently the chieftain of a conquered tribe, the name and origin of which are carefully denoted by a number of hiero-

(1) Seler, "Gesammelte Abhandlungen," vol. ii, p. 128-162; Ant. l'énatiel, "Monumentos," Atlas ii, pl. 170-211.

(2) Seler, "Gesammelte Abhandlungen," vol. ii, p. 154.

(3) Leop. Batres, "Explorations of Mount Alban," (Mexico, 1902, in-8).

(4) Seler, "Gesammelte Abhandlungen," vol. ii, p. 359-361.

(5) Cf. "Añales del Museo Nacional de Mexico, 2ª Epoca," i, pl. vi and p. 210.

(6) Seler, "Wandmalereien von Mitla," (Berlin, 1895, in-fol.), pl. ii-iii and "Gesammelte Abhandlungen," vol. ii, p. 346-347.

(7) Cf. A. Bastian, "Steinskulpturen aus Guatemala," Berlin, 1882, in the "Veröffentlichungen der Königlichen Museen zu Berlin"; S. Habel, "The sculptures of Santa Lucia Cosumalwhuapa in Guatemala" (Washington, 1879, in-4); E. Seler, in the "Centenario" of Madrid, n. 26 (1892), p. 241-252; Herm. Strebel, "Jahrbuch der Hamburger wissenschaftlichen Anstalten," vol. xi (1894); for the sculptures of Pantaleon, cf. Cécilie Seler, "Auf alten Wegen in Mexiko und Guatemala," (Berlin, 1900, pl. xliii, also Ch. Vreeland and J. F. Bransford, "Annual report of the Board of Regents of the Smithsonian Institution for 1884," (Washington, 1885), p. 719-730).

(8) Cf. Cécilie Seler, *op. cit.*, p. 237-241.



glyphics (<sup>1</sup>). This may be of great importance for the decipherment of the Maya hieroglyphics. In the grandiose sculptures of the playing-court at Chichen-Itza in Yucatan, are similar processions of warriors, but they are in Mexican (Toltec?) attire and the hieroglyphics seem also more Mexican in appearance (<sup>2</sup>).

## 2.

### DOCUMENTS IN THE MEXICAN LANGUAGE OR IN SPANISH TRANSLATIONS.

The bibliography of this class of documents has been given by Bandelier (<sup>3</sup>), Brinton (<sup>4</sup>), Icazbalceta (<sup>5</sup>), Borsari (<sup>6</sup>), Boban (<sup>7</sup>), and Omont (<sup>8</sup>). They are nearly all in the Mexican language or in one of the Maya dialects (Quiche, Kakchiquel, etc.).

Soon after the Spanish conquest, the priests taught the

(1) Cf. Teobert Maler, "Researches in the Usumatsintla valley" in the "Memoirs of the Peabody Museum, Harvard University," (Cambridge, Mass.), vol. ii, pl. xxi: stela 12 of Piedras Negras. One of the most frequent hieroglyphs on this stela is the bat ( $t\bar{\gamma}'ot\bar{\gamma}$ ), which may perhaps have something to do with the Maya bat tribe ( $T\bar{\gamma}'ot\bar{\gamma}il$ )? On relief n. 2 from Piedras Negras (*ibid.* pl. xxxi) the central figure has *five* hieroglyphs over his head and each of the kneeling warriors *six*.

(2) Cf. Maudslay in the archaeological portion of Godmann and Salvin's "Biologia Centrali-Americana," (London, 1889-1902, oblong fol.).

(3) Bandelier, "Sources for aboriginal history of Spanish America," in the "Proceedings of the American Association for the advancement of Science," vol. 27 (1878).

(4) Brinton, "Aboriginal American authors and their productions," (Philadelphia, 1883).

(5) Joaquín García Icazbalceta, "Apuntes para un catálogo de escritores en lenguas indígenas de America," (Mexico, 1886, in-16).

(6) Ferd. Borsari, "La letteratura degl' indigeni Americani," (Napoli, 1888, in-8).

(7) Eugène Boban, "Documents pour servir à l'histoire du Mexique... Catalogue raisonné de la collection Aubin-Goupil" (Paris, 1891, 2 vols. in-4), with an atlas of plates. All the manuscripts described are now in the Paris Bibliothèque nationale.

(8) Henri Omont, "Catalogue des manuscrits mexicains de la Bibliothèque nationale," (Paris, 1899, in-8), and in the "Revue des bibliothèques."

Mexicans the use of the Roman alphabet. The more intelligent of the Indians speedily learnt to read and write and made use of their new acquirement, not only to note down on paper the traditions still current in the land, but also to comment on, explain and translate the old picture manuscripts. On the other hand, to increase their influence on Indian minds, the priests soon found it necessary to master thoroughly the intricacies of the native languages and succeeded so well, that they soon wrote in Mexican quite a number of sermons and theological tracts. Fortunately for us, in order to get rid of every trace of paganism, the priests began also to study minutely the Heathen traditions, customs, legends and poems and compiled whole volumes of them, for the benefit of their fellow-missionaries. Of this curious Indian and Spanish literature, too little has survived, but what remains is for us of the highest importance and supplies us with information that nothing else could replace.

Besides a number of minor anonymous chronicles, mentioned in Boturini's catalogue (1), and now preserved partly in Paris Bibliothèque Nationale, from the Aubin-Goupil collection and partly in Mexico, the most valuable of all these texts is undoubtedly the "Historia de los Reynos de Colhuacan y de Mexico," the first portion of which, called by Ramirez *Añales de Quauhtitlan* (2), contains legends of the *Chichimec* and *Toltec* periods with a full historical account of all noteworthy events down to the Spanish conquest. The second portion, which I have recently published at Paris, in the original

(1) Benaduci Boturini, "Catálogo del Museo Indiano," being an appendix to his "Idea de una nueva historia general de la America Septentrional," (Madrid, 1746, in-4).

(2) These *Anales de Quauhtitlan* have been printed with little accuracy and a very poor Spanish translation in the appendix to vol. iii of the "Anales del Museo Nacional de México," (1885).

language, but with a Latin translation, contains the legends of the five ages of the World, of the Creation, etc. (1).

The original work, written about A.D. 1558, is doubtless the translation of a picture manuscript, resembling the lost archetype of Codex Vaticanus 3738 (or A).

Closely connected with the above is the Codex Zumarraga (2), dated 1547 (*Codex Fuenleal* or *Historia de los Mexicanos por sus pinturas*); also A. Thevet's *Histoire du Mechiue* (3), probably derived from Andr. Olmos and doubtless brought to France with *Codex Mendoza* in A.D. 1549.

Among the Indian authors we may quote first of all Cristobal del Castillo (4) 1526-1606, whose works are unfortunately lost, with the exception of a few quotations from them by Leon y Gama (5) and some fragments in the Bibliothèque Nationale (6); D. Gabriel Ayala (7), who wrote about A.D. 1562; Hernando Alvarado Tezozomoc (8)

(1) Cf. "Journal de la Société des Américanistes de Paris," new series, vol. iii, n. 2, pp. 239-297 and for the history of the various manuscripts, my paper in the Berlin "Zeitschrift für Ethnologie," vol. xxxviii, p. 752-760.

(2) Part of the so-called "Libro de oro," printed in the "Anales del Museo Nacional de Mexico," vol. ii (1882), p. 83-106, and in Icazbalceta's "Nueva colección de documentos para la historia de México," vol. iii, pp. 228 seqq.

(3) Published by Ed. de Jonghe, "Journal de la Société des Américanistes de Paris," new series, vol. ii, n. 1 (1905), pp. 1-43.

(4) Cf. on his works, del Paso y Troncoso, "Comptes-rendus of the XIIth International Congress of Americanists," (Paris, 1902) p. 189-210. According to Cabrera (éd. Minutoli, Berlin, 1832), p. 113, a historical work by Cristobal del Castillo is preserved in the Jesuits' college at Tepozotlan.

(5) Cf. Leon y Gama, "Descripción histórica y cronológica de las dos piedras," (Mexico, 1792, in-8), notes to pp. 33, 34 and 39; pp. 49, 59, 79, 82 and 83 (note to p. 81).

(6) The "Ms. Mexican n. 293," of the Bibliothèque nationale at Paris, contains a "Prólogo del Autor Christoval del Castillo, relatif à l'histoire de Mexique," written in Mexican and dated 1599.

(7) Wrote in Mexican his "Apuntes históricos de la nación mixteca," (1243-1562). Cf. Boturini, "Catálogo del Museo Indiano."

(8) Tezozomoc, "Crónica Mexicana," written about A.D. 1598, first printed by Kingsborough, "Mexican Antiquities," vol. ix, fol. 1-196 and republished by Orozco y Berra (Mexico, 1878).

A.D. 1598, Don Fernando Alva de Ixtlilxochitl <sup>1)</sup> 1568-1648 and Domingo de San Antonio y Muñon Chimalpain Quauhlehuanitzin <sup>2)</sup>, who flourished about A.D. 1626.

The works of Ixtlilxochitl have often been greatly underrated; he had in his possession a number of priceless old picture-manuscripts, and we cannot too much regret the loss not only of these documents, but also of all his own Mexican autographs <sup>3)</sup>. All we have is a series of Spanish translations; it is in that form only that his works have survived and have been published. The numerous contradictions, which it is only too easy to discover in his books, are to be understood, it seems, more as the result of misinterpretation of the original documents he used, than as a proof of actual errors in these documents. It will be found necessary to keep carefully apart his various sources of information, and to

[1] The numerous works of Ixtlilxochitl, written between 1608 and 1616, are preserved in a number of manuscripts, chiefly in the Muñoz copies at Madrid and in the Archivo Nacional de México. The "Historia chichimeca" was printed by Kingsborough, vol. ix, fol. 197-316; also the "Relaciones," *ibid.*, fol. 317-468; both were republished by Alfredo Chavero (Mexico, 1891-1892, 2 vols.). The "Horribles crueldades de los conquistadores de Mexico," are to be found in the appendix to Bustamante's edition of Sahagun (Mexico, 1829).

[2] Beristain y Sousa (vol. i, p. 302) mentions a number of works by Chimalpain, fragments of which are still, I believe, preserved in the Colegio de San Gregorio, at Mexico; but, there exists of them a large series of copies, made by Boturini during the second quarter of the XVIIIth century, in the Colegio de San Pedro y San Pablo, at Mexico. Most of these copies are now in the Bibliothèque nationale, at Paris. The annals (1268-1612), of the 6th and 7th *relacion*, have been published by Reini Siméon (Paris, 1889), with a not very reliable translation. I am preparing a critical edition of the still unpublished "Memorial breve acerca de la fundacion de la ciudad de Culhuacan (A.D. 670 to 1299).

[3] According to a document from the Ayuntamiento of Texcoco, dated 7 November 1608, Ixtlilxochitl submits his writings to the judgement of the Alcade of Otomba and other officials: "Y habiéndola examinado los de Otomba la aprobaron, y mandaron que el interprete Francisco Rodriguez Alguacil, la traslade del idioma mexicano al castellano." Cf. Alfredo Chavero, "Obras historic. de Don Fernando de Alva Ixtlilxochitl, vol. i (1891), pp. 463-464, note.

control them continually from all other available documents. Then, and then only, will the true value of his important lists and other data be fully and critically established.

In the same group of works must be classed the unique and monumental volume of Fray Bernardino de Sahagun, as it is nothing else, on the whole, than the careful and accurate transcription of all the information dictated to him year after year by a number of learned Indians. He wrote it down, as he heard it from their mouth, in the Mexican language, and it was only later on that he made an abridged translation into Spanish. The original Aztec text has never been published in full, although del Paso y Troncoso has been working for many years at an edition, on behalf of the Mexican government. But there are excellent editions with translations by E. Seler, of several separate chapters of the Mexican text<sup>(1)</sup>.

This applies specially to the very archaic hymns<sup>(2)</sup> sung in honour of the Mexican gods. Seler's translations are in many respects definitive, and have been by no means superseded through various attempts to *improve* upon them, especially those of K. Th. Preuss, in which so

(1) The original Mexican text of Sahagun, completed in 1569, is preserved at Madrid, both in the Biblioteca de la Academia de la Historia and in the Biblioteca del Palacio. A clean copy, slightly later in date, with the Aztec and Spanish texts, belongs to the Laurentian Library, at Florence. Other Spanish copies, discovered in a Mexican monastery, were used for Bustamante's edition: "Historia de las cosas de la Nueva España," (Mexico, 1829, 3 vol.); the Spanish text is also given by Kingsborough (vol. vii), and there is a convenient French translation by Rémi Siméon and Jourdanet (Paris, 1880, in-8). Separate chapters relating to the Gods, to the metal works, to the feather mosaics and to the Mexican feasts, have been published and translated (with the original Aztec text) by Seler, in the "Veröffentlichungen des Königlichen Museums für Völkerkunde zu Berlin," vol. i, 4 (1890), pp. 117-181, and vol. ii (1899), pp. 168-209. Cf. his "Gesammelte Abhandlungen," vol. ii, pp. 420-508 and 620-663.

(2) Brought together and published by Seler, "Die religiösen Gesänge der alten Mexikaner" in his "Gesammelte Abhandlungen," vol. ii, pp. 961-1107.

many glaring errors can be easily detected by the specialist'. At any rate, Brinton's meaningless translations<sup>(2)</sup> have been to a great extent done away with by Selser's paper, although we still sadly want a good study of the interesting poems published in 1890 by Brinton with what professed to be a "translation"<sup>(3)</sup>.

The quaint phrases of all these authors are fairly easy to understand, once you have mastered the speeches [*huehuetlatolli*] and metaphors in Padre Olmos' grammar'. Similar texts exist in the Maya idioms, such as

(1) Cf. Preuss, "Zeitschrift der Gesellschaft für Erdkunde," 1905, pp. 370-372. He contends that Selser has mistranslated the hymn to Xipe, although he, Preuss, continually offends the most elementary rules of Mexican grammar. Phonetic laws absolutely prohibit such a derivation, for instance as "youatzin" from "youalli" "night." Cf. Selser's "Remarks," in the same periodical, pp. 461-463. Preuss's "Answer" to Selser's "Remarks," *ibid.*, pp. 465-466, shows little knowledge of Mexican linguistics. If the laws of phonetics had been more familiar to him, he would not have deliberately denied the existence of a moveable prefix "y" in "youatzin" (from "ouatl" = maize-plant and clung to his translation "night"; "night," could only be "youaltzin," and could not be any thing else.

Hardly more accurate are the translations given by Preuss in his "Feuergötter" [Mitteilungen der Anthropologischen Gesellschaft zu Wien, vol. xxxiii, pp. 133-136], often without a satisfactory explanation of the difficult grammatical forms. When, for instance, he studies the form "teoatl" in the sentence "teoatl tlachinolli," "spear throwing and fire," he actually fails to distinguish the absolute pronoun of the second person singular "teuätl", and the words "teo-ätl," "properly ätl," i.e. spear-throwing. Other mistakes have been corrected by Selser, in his paper on the "Holzgeschnitzte Pauke von Malinalco," in the same periodical, vol. xxxiv, pp. 222-274 (especially pp. 266-267).

(2) Cf. Brinton, "Rigveda Americanus," Library of American Literature, vol. viii (Philadelphia, 1890).

(3) Cf. Brinton, "Ancient Nahuatl poetry," (Philadelphia, 1890, in-8), giving the text of 27 early hymns, with a useful introduction on the various kinds of songs, their rhythm, metre and accompanying music.

The same hymns and some others are published, in Mexican only, by Ant. Peñafiel, in the "Colección de documentos para la historia mexicana," (Mexico, 1899, in-fol.). On the latter texts, discovered by Vigil when the Biblioteca Nacional was being rearranged, cf. the "Acts of the XIth International Congress of Americanists" (Mexico, 1897), p. 297.

(4) Andr. de Olmos, "Grammaire de la langue Nahuatl" (1547), published by Rémi Siméon (Paris, 1875, in-8), pp. 202-264;

the celebrated Popol Vuh (5) in the Quiche language, which has been translated by Brasseur de Bourbourg, but not in a thoroughly trustworthy manner. I must also warn against implicit reliance on any of Brinton's translations; his merit, however, was great as a publisher of texts in Indian languages, even when they turn out, like the Cakchiquel annals (6) or the books of Chilam Balam (7), to be but fragments of more important lost works. The most necessary desideratum must now be an exact collation of all these texts with the available manuscripts and they must then all be carefully translated, without any attempt to skip over grammatical difficulties and

"Huehue Tlalolli, Traducion de las antiquas conversaciones ó platicas, por Fray Juan de Torquemada y el Dr. Don Alonso de Zurita" (Mexico, 1901, in-fol.).

(5) Brasseur de Bourbourg, "Popol Vuh, Le Livre sacré... des Quichés," Paris, 1861, in-8), with an enthusiastic but somewhat fantastical introduction of 279 pages. A Spanish translation of the Quiche text, by Padre Ximenez, has been published by Carl Scherzer, with the very important "Scholien des Ximenez," under the title "Las historias del origen de los Indios de esta provincia de Guatemala," (Vienna, 1857). The Ximenez translation may be supplemented from a Spanish text in ms. Mexican 116 of the Paris Bibliothèque Nationale. The "Titulo de los Señores de Totonicapan," published by Charencey (Paris, 1885), may also be mentioned here.

(6) Brinton has only published half the original text of the "Annals of the Cakchiquels" (Philadelphia, 1885).

(7) The remarkable contents of the books of Chilam Balam (The brazen Soothsayer) are derived from Maya manuscripts, and are known to us partly by copies of Pio Perez and Berendt, bought by Brinton and now in the University library at Philadelphia, and partly by earlier manuscripts, now lost, but formerly belonging to the Bishop of Mérida, Crescencio Carillo y Ancona. Since his death they have disappeared and Selser endeavoured in vain to trace them *in situ*, but he fortunately obtained photographs of a number of the more important leaves. Parts of these books have been published by Brinton in his "Chronicles of the Mayas," (Philadelphia, 1882, in-8), including the important "Chronicle of the of Nakuk Pech," (pp. 195-241: "Chronicle of Chac Xulub Chen"), written in 1562 and of which a portion, in a different version, had already been given by Brasseur de Bourbourg in the papers of the "Mission scientifique au Mexique, Manuscrit Troano," vol. II (Paris, 1870, in-4) pp. 110-120, from a copy obtained at Merida, through don Pedro Regil y Peon.

otherwise obscure passages. No useful work can be done with any Maya text, as long as the great Motul *Vocabulario* remains unpublished and, as long as such difficult and obscure texts as the books of Chilam Balam and other similar works, have not been absolutely mastered, no progress will be made with the early history of the Maya tribes, and little will be known of the primitive relations between Mexico and other portions of the Central America.

The key to the interpretation of the Mexican picture-manuscripts is given by the explanatory glosses of *Codex Telleriano-Remensis*, of *Codex Vaticanus* 3738 (or A), and of *Codex Magliabecchi* <sup>1</sup>. Similar explanations are to be found in *Codex Mendoza* and in the *Libro de Tributos*.

We have been thus enabled not only to make out the hieroglyphics of various names and places, but also to test what the authors say about the signs of the days in the 260-day year, the 20-day weeks and their regents, the annual feasts, etc. Various workers, but above all others E. Seler, have succeeded, by a careful comparison of all these religious and astrological manuscripts, in detecting a close parallelism between them and, with the help of the early authors, in gaining a considerable insight into the religious conceptions of the early Mexicans. The result of Seler's researches are ably summed up in his commentaries on the Mexican manuscripts published by the duc de Loubat <sup>2</sup>).

It seems premature to endeavour, as for instance

<sup>1</sup> *Codex Magliabecchi*, now at Florence, has been published in 1903 by Zelia Nuttall, with the exception of a few "objectionable" portions; a full (and better) edition has since been given by the duc de Loubat (1904).

<sup>2</sup> Cf. Seler, "Kommentare zum Tonalamatl der Aubinsche Sammlung," (Berlin, 1900), "zum Codex Fejérváry-Mayer" (1901), "zum Codex Vaticanus B," n. 3773 (Berlin, 1902), "zum Codex Borgia," vol. i (1904), and vol. ii (1906).



K. T. Preuss<sup>(1)</sup>), to deduce, as yet, general conclusions from these mythological documents, and still more to pass a definitive judgement upon Mexican religion, on the slender ground of alleged analogies with the ceremonies and beliefs of other nations. The time has not yet come and it is only too easy to distort and deform the few facts, we have with great difficulty succeeded in establishing; may it also be observed that on several occasions, one is apt on the pretext of a few striking analogies to overlook important and far more essential differences. As long as we do not build on solid rock, the constructions of our mind will perhaps be done away with as rapidly as they have been conceived. A solid foundation to our work will always be the critical study of the original songs and hymns. We look forward to Preuss's welcome investigation of Cora and Huichol Indian poetry and we sincerely hope he may succeed in bringing forth critical editions, in which the linguistic difficulties, at least, will be thoroughly mastered.

### 3.

#### WORKS OF THE CONQUISTADORES AND OTHER SPANISH AUTHORS.

At the head of the roll stands the personal evidence

(1) Cf. Preuss, "Phallische Fruchtbarkeitsdämonen als Träger des altmexikanischen Dramas," in the "Archiv für Anthropologie," new series, vol. i, part 3, pp. 129-188; the same, "Feuergötter als Ausgangspunkt zum Verständnis der mexikanischen Religion in ihrem Zusammenhange" in the "Mitteilungen der Anthropologischen Gesellschaft zu Wien," vol. xxxiii; the same, "Der Ursprung der Religion und Kunst," in "Globus," vol. 86, n. 20 seqq.—Many critics will disagree with the "analogies" propounded in his paper on the "Dämonische Ursprung des griechischen Dramas erläutert durch mexikanische Parallelen," in the "Neue Jahrbücher," second series, vol. 18, part 3. His comparison between the Ascension of Christ and the "Bild einer Mexikanischen Totenfahrt (*l.c.* pp. 182-183), seems all the more venturesome as on the monument he refers to, the dead man is *not* climbing up a tree towards a *star*, for the

of such men as Fernando Cortés <sup>(2)</sup> and his comrade Bernal Diaz del Castillo <sup>(3)</sup>, together with the contemporary narrative of Pietro Martire <sup>(4)</sup>. Documents of this period are too numerous to be enumerated fully, but we can at least refer to a number of useful collections, both ancient and modern, by Ramusio <sup>(5)</sup>, A. G. Barcia <sup>(6)</sup>, Navarrete <sup>(7)</sup>, Ternaux-Compans <sup>(8)</sup>, Enrique de Vedia <sup>(9)</sup>, and others; to the *Cartas de Indias* <sup>(10)</sup>, and to the several *Colecciones de documentos* more or less *inéditos*, but all relating to the discovery and conquest of America and Mexico <sup>(11)</sup>. A careful sifting of the ethnographical

alleged *star* is merely the hieroglyphic for *night*. Cf. "Globus," vol. 87 (1905) p. 140, and particularly the unjustified attacks against Selser, contained in note 27.

(2) The best edition of the letters of F. Cortés has been given by Pascal Gayangos (Paris, 1886).

(3) Bernal Diaz del Castillo, "Historia verdadera de la conquista de la Nueva España," (Madrid, 1632); this is the original edition, but there are several editions in English and a very convenient French translation by D. Jourdanet (Paris, 1877, in-8). The Spanish text has been reprinted in two volumes, in 1892, in Guatemala.

(4) Pietro Martire d'Anghiera, "De insulis nuper repertis," (Bâle, 1524); "De rebus oceanicis et novo orbe decades tres," (Cologne, 1574; cf. Joh. Gerigk, "Das Opus epistolarum des Petrus Martyr, ein Beitrag zur Kritik der Quellen des ausgehenden 15. und beginnenden 16. Jahrhunderts" (Braunschweig, 1881), and the recent French translation of Gaffarel." (Paris, 1907, in-8), forming vol. xxi of the "Recueil de voyages et documents."

(5) B. Ramusio, "Raccolta," vol. iii (Venice, 1565, in-fol.).

(6) A. G. Barcia, "Historiadores primitivos de las Indias Occidentales," (Madrid, 1749, 3 vol. in-fol.).

(7) M. F. Navarrete, "Coleccion de los viajes y descubrimientos..." (Madrid, 1837 foll., 5 vol. in-4); Navarrete, "Biblioteca maritima española," (Madrid, 1851, 2 vol.), with a good list of sources.

(8) Ternaux-Compans, "Voyages. relations et mémoires originaux pour servir à l'histoire de la découverte de l'Amérique," (Paris, 1837-1853, 20 vol.).

(9) Enrique de Vedia, "Historiadores primitivos de Indias," (Biblioteca de autores españoles) vol. i-ii, (Madrid, 1862-1877).

(10) "Cartas de Indias," published by the "Ministerio de Fomento," (Madrid, 1877, in-fol.).

(11) "Coleccion de documentos inéditos relativos al descubrimiento, conquista y colonizacion de las posesiones españolas en America y Oceania," (Madrid, 1864-1884, 42 vols., and 2nd series, Madrid, 1885-1900, 13 vols.).—"Coleccion de documentos para la

evidence contained in one of the more noteworthy of these publications, has been recently carried out by G. Friederici in a highly commendable paper<sup>(12)</sup>.

In the limited space we dispose of here, we cannot attempt to draw up a full list of all the Spanish historians who have written about Mexico in the XVIth and XVIIth century. The closer they lived to the time of the conquest, the more valuable to us is their information, as they drew directly from native tradition and were perfectly acquainted with the Indian dialects. It would be a welcome task to compare and sift their documents and sources, and to find out how far these authors rely on independent information and to what extent, on the contrary, they borrow from one another<sup>(13)</sup>. Among the most important writers may be mentioned Torquemada<sup>(14)</sup>, Motolinia<sup>(15)</sup> (*alias* Fray Toribio de Benavente), Mendieta<sup>(16)</sup>, Camargo<sup>(17)</sup>, Pomar<sup>(18)</sup>, Duran<sup>(19)</sup>, Jacinto

historia de Mexico," published by S. G. Icazbalceta (Mexico, 1858, 1866, 1870, 3 vols.).—"Nueva coleccion de documentos para la historia de Mexico," by the same (Mexico, 1885-1882, 5 vols.).—Cf. also the "Coleccion de documentos inéditos para la historia de España," published at Madrid.

(12) G. Friederici "Die Ethnographie in den Documentos inéditos del Archivó de Indias," in "Globus," vol. 90 (1906), pp. 287-289 and 302-305.

(13) A certain amount of preliminary work has been done by Beauvois, "Les antiquités mexicaines du P. Duran, comparées aux abrégés des PP. J. Tobar et J. d'Acosta," in "Revue des questions historiques," July, 1885, pp. 109-165; the same, "Deux sources de l'histoire des Quetzalcoatl," in the "Muséon" of Louvain, 1898; cf. also Alfredo Chavero, "Apuntes viejos."

(14) Fray Juan de Torquemada, "xxi libros rituales: Monarquia Indiana..." published by Barcia (Madrid, 1723, 2 vols., in-fol.). The first edition is of 1613.

(15) Fray Toribio Benavente (Motolinia), "Historia de los Indios de la Nueva España" (written about 1541) in the "Coleccion de documentos para la historia de Mexico," vol. i (1858). His "Memoriales" have been published by Luis Garcia Pimentel (Mexico, 1903, in-8).

(16) Fray Geronimo de Mendieta, "Historia ecclesiastica Indiana," (written about 1570) in the "Coleccion de documentos para la historia de Mexico," vol. iii (1870).—Cf. also "Códice Mendieta," in

de la Serna <sup>17</sup>, Gomara <sup>18</sup>, Las Casas <sup>19</sup>, Pedro Ponce <sup>20</sup>, J. Tobar <sup>21</sup>, Zurita <sup>22</sup>, Vetancurt <sup>23</sup>, etc. The great works of Oviedo <sup>24</sup>, Herrera <sup>25</sup>, and Acosta <sup>26</sup> supply an inexhaustible amount of priceless information.

the "Nueva coleccion de documentos para la historia de Mexico," vol. iv (1892).

17. D. Muñoz Camargo, "Historia de Tlaxcala" (written about 1590, published by Chavero (Mexico, 1892).

18. J. B. Pomar, "Relacion de Texcoco" (written about 1582), published in the "Nueva coleccion de documentos para la historia de Mexico," vol. iii (1891).

19. P. Diego Duran, "Historia de la Nueva España y islas de tierra firme" (written about 1580, published by José Fernandez Ramirez (Mexico, 1867-1880, 2 vols. in-4). Cf. the paper by Beauvois quoted "supra," p. 27, note 13 and the note lower down on Acosta's book; also the "Codex Ramirez," published with the "Chronicle of Tezozomoc" by Orozco y Berra (Mexico, 1878, in-4).

20. Jacinto de la Serna, "Manual de ministros de Indios para el conocimiento de sus idolatrias," published in the "Anales del Museo Nacional de Mexico," vol. vi (1892), pp. 265-480.

21. Fray Lopez de Gomara, "La historia general de las Indias" (Medina del Campo, 1553, in-fol.), of which there are many reprints and translations. It is to be found, for instance, together with the "Crónica de la Nueva España" in vol. ii of Barcia's "Historiadores primitivos," Madrid, 1749, in-fol.).

22. Bartol de Las Casas, "Historia de las Indias," published by Marq. de la Fuesanta del Valle y S. Rayon (Madrid, 1875-1876, 5 vols., in-8. His "Historia apologetica" is to be found in Kingsborough, vol. viii, p. 248 seqq. (not in full), and in the "Coleccion de documentos inéditos para la historia de España," vol. 66, p. 237 seqq.

23. Pedro Ponce, "Relacion breve y verdadera de algunas cosas de las muchas que sucedieron al P. F. Al. P. en la Nueva España" (Madrid, 1873, 2 vols. in-8).—Pedro Ponce's relation of A.D. 1585 is published in the "Coleccion de documentos inéditos para la historia de España," vol. 57.

24. Juan Tobar, "Relacion del origen de los Indios," published by J. M. Vigil in Orozco y Berra's edition of Tezozomoc (Mexico, 1878, in-4).

25. Al. de Zurita, "Breve relacion de los señores de la Nueva España," in the "Nueva coleccion de documentos para la historia de Mexico," vol. iii (1891); cf. also Ternaux-Compins, "Voyages, relations et mémoires originaux," vol. xi, and "Coleccion de documentos inéditos relativos al descubrimiento," vol. ii (1865).

26. Vetancurt, "Teatro mexicano." (Mexico, 1867-1898, in-fol.).

27. Oviedo y Valdés, "La historia general de las Indias" (Sevilla, 1533, in-fol.), republished by the "Real Academia de la Historia," Madrid, 1851-1855, 4 vols., in-4).

Let it here be observed that we are better informed about the valley of Mexico than about the numerous other provinces of the country, the evidence of which, being scarce, is all the more valuable. This gives great importance to the works of Motolinia, who has given elaborate accounts of every province and its inhabitants. For New-Mexico and the neighbouring regions, we have Fray Ant. Tello <sup>(30)</sup> and La Mota Padilla <sup>(31)</sup>; for Michoacan, a valuable anonymous report <sup>(32)</sup>; for Oaxaca, the very scarce volumes of Burgoa <sup>(33)</sup>; for Chiapas, Bartol. de Las Casas <sup>(34)</sup>, Nuñez de la Vega <sup>(35)</sup>, Franc. Ximenez and Ramon de Ordoñez y Aguiar <sup>(36)</sup>, whose works are

(28) Ant. de Herrera, "Historia general de los hechos de los Castellanos en las islas i tierra firme del mar Oceano," published by Barcia (1726-1730, 4 vols., in fol.).

(29) J. de Acosta, "Historia natural y moral de las Indias," (Paris, 1598, or better Madrid, 1792, 2 vols., in-4). He either borrowed freely from Duran or made use of the same source of information.

(30) Fray Ant. Tello, "Crónica miscelánea y conquista espiritual y temporal de la Sta Provincia de Xalisco," 1653 (Guadalajara, 1890-1891, 2 vols. in-4).

(31) M. de la Mota Padilla, "Historia de la conquista de la provincia de la Nueva Galicia," 1742 (Mexico, 1870, in-8).

(32) "Relacion de las ceremonias, rictos, poblacion y gubernacion de los Indios de Mechuacan hecha al Ill<sup>mo</sup> Sr D. Ant. de Mendoza," first published by D. Florencio Janér (Madrid, 1875) and reprinted, but not much better by M. M. Solórzano (Morelia, 1903, in-8).

(33) Fr. de Burgoa, "Geográfica descripción de la parte septentrional del polo artica de la America... y sitio astronómico de esta provincia de Predicadores de Antequera, Valle de Oaxaca (Mexico, 1674, in-fol.).—Fr. de Burgoa, "Palestra historial de virtudes y exemplares apostólicos" (Mexico, 1670); is being reprinted by the Museo Nacional de Mexico.

(34) On the life and works of the first Bishop of Chiapas, Bartol. de Las Casas, cf. A. M. Fabié's biography (Madrid, 1879, 2 vols., in-8).

(35) Nuñez de la Vega, "Constituciones diocesaneas del obispado de Chiapas," (Rome, 1702).

(36) Franc. Ximenez, "Historia de la provincia de Predicadores de San Vincente de Chiaqas y Guatemala" (written about 1720).—Ramon de Ordoñez y Aguiar, "Historia de la creacion del cielo y tierra, conforme al sistema de la gentilidad americana" (written about 1780). These two works remained in manuscript and copies of them existed in Mexico and Guatemala; they contained translations of the "Popol Vuh." The book of Ordoñez was used by Pablo Felis Cabrera for his unreliable "Teatro critico Americano" (London, 1822), published together with the relation of

as yet practically inaccessible. On Yucatan, there are a number of highly interesting works, by Landa <sup>(37)</sup>, Cogolludo <sup>(38)</sup>, Lizana <sup>(39)</sup> and many others <sup>(40)</sup>. For Guatemala, we may refer to Pedro de Alvarado's correspondence with Cortes <sup>(41)</sup>, to Fuentes y Guzman <sup>(42)</sup>, Ant. de Remesal <sup>(43)</sup>, Palacio <sup>(44)</sup>, Fr. Ximenez <sup>(45)</sup>, and Juarros <sup>(46)</sup>, and finally, for Nicaragua, to Oviedo <sup>(47)</sup>.

Ant. del Rios, and of which a German translation may be found in F. H. von Minutoli, "Beschreibung einer alten Stadt" (Berlin, 1832), p. 23-123.

<sup>(37)</sup> Diego de Landa, "Relacion de las cosas de Yucatan," first published (inaccurately) by Brasseur de Bourbourg (Paris, 1864, in-8). The best edition has been given by de la Rada y Delgado in the appendix to Léon de Rosny's "Ensayo sobre la interpretacion de la escritura hieratica de la America Central" (Madrid, 1881, in-fol.); the text is also to be found in the "Coleccion de documentos ineditos relativos al descubrimiento," 2nd series, vol. xiii (1900), p. 265-408.

<sup>(38)</sup> Fr. D. Lop. Cogolludo, "Historia de Yucatan" (Madrid, 1688, in-fol.); 2nd edition: Merida, 1842; 3rd edition: 1897.

<sup>(39)</sup> Bern. Lizana, "Devocionario de Nra Señora de Itzmal, Historia de Yucatan é conquista espiritual," 1663. Partly printed in Brasseur de Bourbourg's edition of Landa (1864).

<sup>(40)</sup> One of the most important modern works is a memoir by Alfred M. Tozzer, "A comparative study of the Mayas and the Lacandones" (New York, Archæological Institute of America, 1907, in-8), being the "Report of the fellow in American archæology, 1902-1905."

<sup>(41)</sup> Pedro de Alvarado, "Letters to Cortès" (3524). Two of them are published in Ramusio's 3rd vol. (1565). E. G. Squier had copies of the others.

<sup>(42)</sup> Fuentes y Guzman, "Recordacion florida" (1690), published by D. Justo Zaragoza (Madrid, 1882-1883, 2 vols., in-8).

<sup>(43)</sup> Ant. de Remesal. "Historia general de las Indias occidentales y particular de la gobernacion de Chiapas y Guatemala" (Madrid, 1619-1620).

<sup>(44)</sup> Diego Garcia de Palacio, "Carta dirigida al Rey de España," 1576, published by Ternaux-Compans (1840), and in the "Coleccion de documentos ineditos relativos al descubrimiento," vol. vi (1866); also by Squier (New-York, 1860).

<sup>(45)</sup> For Ximenez, cf. supra p. 29, note 36.

<sup>(46)</sup> D. Juarros, "Compendio de la historia de Guatemala" (Guatemala, 1808-1818, 2 vols.; also London, 1823). Cf. also Fr. de Paula Garcia Pelaez, "Memorias para la historia del antiguo reyno de Guatemala" (Guatemala, 1851, 3 vols.); The "Requête de plusieurs chefs Indiens d'Atitlan," in Ternaux-Compans' "Recueil de pièces relatives à la conquête du Mexique" (Paris, 1838); among modern authors we may quote O. Stoll and K. Sapper.

<sup>(47)</sup> For Oviedo, cf. supra p. 28, note 27.

## MODERN AUTHORS.

It may be said that a new era of Mexican research begins with the Italian archæologist Boturini. He was the first European to spend years and years in Mexico, in the search of early manuscripts, sowing a crop he never lived to reap; for after many misfortunes, all his collections having been taken from him by force, he died in Spain, a pauper. But his *Idea de una nueva historia* <sup>(1)</sup> in which he summed up the contents of his priceless archives, not without method and critical skill, marks a starting point in a new direction. Boturini's copies have preserved a number of priceless texts, otherwise lost or disfigured. He is a connecting link between ancient and modern science, having still been able to study and copy in the various Mexican monasteries, the works of Ixtlilxochitl and of his heir and continuator Sigüenza y Gongora. For half a century and more Veytia, Leon y Gama and Pichardo did their best to preserve from dispersion Boturini's collections and notes. Alexander von Humboldt still saw Gama's archives and brought back to Germany several picture manuscripts from his sale, which he presented to the Royal Library at Berlin <sup>(2)</sup>. But the greater portion of these manuscripts were discovered in various monasteries by Aubin <sup>3</sup>,

(1) Lorenzo Boturini Benaduci, "Idea de una nueva historia general de la America septentrional fundada sobre material copioso de figuras, symbolos, caracteres y geroglificos, cantares y manuscritos de autores indios" (Madrid, 1746, in-1).

(2) Described and published by E. Seler (Berlin, 1892).

(3) J.-M.-A. Aubin, "Notice sur une collection d'antiquités mexicaines (Peintures et manuscrits)", Paris, 1851, in-8; cf. also Boban and Omont, *op. cit.*

brought by him to Paris in 1840 and subsequently purchased by Eugène Goupil, whose widow has presented them to the Paris Bibliothèque Nationale.

Veytia made but little progress with the publication of Boturini's collections<sup>(1)</sup>. The historian Muñoz<sup>(2)</sup> brought together a very extensive series of copies and extracts<sup>(3)</sup>, but never succeeded in publishing more than the first volume of his great book. Several Jesuits, however, did excellent work in this field, especially Clavigero, with his histories of Mexico<sup>(4)</sup> and California<sup>(5)</sup>; also Lino Fabrega, the interpreter of the famous Borgian codex<sup>(6)</sup> which Humboldt studied at Velletri. In those days Leon y Gama revealed himself the founder of Mexican science, in the excellent monograph he devoted to some sculptures recently discovered at the Plaza Mayor excavations<sup>(7)</sup>. As Leon y Gama still made use of Cristóbal del Castillo, his authority on all matters concerning the calendar is of the highest importance.

Alexander von Humboldt, who travelled through Mexico in the first years of the XIXth century, was the first

(1) Mariano F. de Veytia Echeverria, "Historia antigua de Méjico." published by F. Ortega (Mexico, 1836, 3 vols.).—The same, "Tezcoco en los ultimos tiempos de sus antiguos reyes" (from Boturini's notes), published by Bustamante (Mexico, 1826).

(2) J.-B. Muñoz, "Historia del Nuevo Mundo," vol. i (Madrid, 1793, in-4).

(3) Cf. Chavero, "Anales del Museo Nacional de Mexico," 2ª epoca, vol. i, p. 153 seqq.

(4) Fray Saverio Clavigero, "Storia antica del Messico cavata de' migliori storici spagnuoli e da' manoscritti e dalle pitture antiche degl' Indiani" Cesena, 1780-1781, 4 vols., in-4).

(5) Fray Saverio Clavigero, "Storia della California" (Venice, 1789, 2 vols., in-8).

(6) Lino Fabrega, "Interpretacion del Códice Borgiano," published in the "Anales del Museo Nacional de Mexico," vol. v. It is necessary to say that this "interpretation" in spite of its merits, has been completely superseded by Selér's monumental work on the codex.

(7) Antonio de Leon y Gama, "Descripcion historica y cronológica de las dos piedras que... se hallaron en la plaza principal de Mexico, el año de 1790" (Mexico, 1790); second edition by C. M. de Bustamante (Mexico, 1832, 2 vols.).



to make Europeans acquainted with the antiquities and prehistoric civilisation of the land. His *Vues des Cordillères* and other works <sup>(1)</sup> are still of value, in spite of all the errors they contain and the author's continual desire to establish connections between Mexico and the Far East. Lord Kingsborough's great encyclopædia (London, 1831-1848), the costs of which ruined the author, is likewise still of value, as the Oxford and Vienna manuscripts are only accessible there.

The political misfortunes of Mexico, in the course of the last century, have not only been highly prejudicial to the country, but have also been fatal in many respects to archæology: the archives of the sequestered monasteries have been in many cases destroyed and nearly always dispersed, though there is some hope of valuable documents turning up some day in Cuba <sup>(2)</sup>.

To enumerate all the travellers who have visited Mexico since Humboldt, would be outside the scope of this little memoir <sup>(3)</sup>. Besides that, the Mexicans themselves have not been idle and such savants as José Fernandez Ramirez and Joaquin Garcia Icazbalceta have done as much as any European for the history of Mexico.

(1) Alexander von Humboldt, "*Vues des Cordillères et monuments des peuples indigènes de l'Amérique*" (Paris, 1813, 2 vols., in-fol.); the same, "*Essai politique sur le royaume de la Nouvelle Espagne*," 2nd edition (Paris, 1825-1827, 4 vol.).

(2) Cf. K. Scherzer, "*Historias del origen de los Indios*" (Vienna, 1857), introd. p. v.

(3) It may be sufficient to mention: Lieutenant Hardy (1825-1828); Scheide and Deppe (1828); Carl Nebel (1830-1832); and the works of W. Bullok, "*Six months residence and travels in Mexico*" (London, 1824); Friedrich Ratzel, "*Mexico im Jahre 1827, nach dem Englischen*" (Weimar, 1828-1829, 2 vols.); Jos. Burkart, "*Aufenthalt und Reisen in Mexiko*" (Stuttgart, 1836, 2 vols.); Ed. Mühlendorff, "*Versuch einer getreuen Schilderung der Republik Mejico*" (Hannover, 1844, 2 vols.); K. Barth. Heller, "*Reisen in Mexiko in den Jahren 1845 bis 1848*" (Leipzig, 1853); E. Sartorius, "*Mexiko*" (Darmstadt, 1859); Baron J. W. von Müller, "*Beiträge zur Geschichte, Statistik und Zoologie von Mexiko*" (Leipzig, 1865); Baron J. W. von Müller, "*Reisen in den Vereinigten Staaten, Kanada und Mexiko*" (Leipzig, 1864, 3 vols.).

Ramirez spent many years in Europe, copying manuscripts in libraries and archives. His papers belonged subsequently to Alfredo Chavero. Icazbalceta explored with equal energy the libraries of his own country and published a number of important works. A further progress was realised by the creation in Mexico of the Museo Nacional and of the Biblioteca, a nucleus which speedily grew in the most satisfactory way. Provincial museums and important private collections were formed in a number of towns, and in the last few years the Government has forbidden the exportation of antiquities and has taken under its protection the ruins of the ancient cities.

The geological exploration of the land was begun on a large scale by the *Mission scientifique au Mexique* (1). The "great man" of Mexican research was in those days Brasseur de Bourbourg. His repeated travels through Mexico and Spain enabled him to discover a number of most valuable documents (2), but his fantastical imagination continually led him astray, and it has been by no means an easy task to get rid of all the quaint ideas his bulky publications have made popular in Europe.

Hardly less fortunate in the discovery of new manuscripts has been Léon de Rosny (3), who may well be said to have founded with Brasseur de Bourbourg the Maya science: subsequent authors, such as the late Ernst

(1) Cf. "Archives de la Commission scientifique du Mexique" (Paris, 1865-1867, 3 vols., in-8, with valuable papers by Aubin, Brasseur de Bourbourg, Dollfus, Léouzon le Duc, etc.).

(2) Brasseur discovered the Codex Troano, the Motul dictionary, Landa's historical work containing the key to the Maya hieroglyphs, and what he called the "Codex Chimalpopoca," i.e. the "Historia de los Reynos de Colhuacan y de Mexico."

(3) Léon de Rosny discovered the "Codex Parisiensis" (or "Perezianus"), and was the first to publish the "Codex Cortesianus," which he proved to be a portion of the "Codex Troano."

Förstemann, such as Seler, Schellhas, Cyrus Thomas and others, have done much to advance our knowledge in that branch of Mexican research.

In the last thirty years the number of specialists has rapidly increased, not only as regards Mexican studies but also in the whole field of *Americana*. Much has been done to prevent dispersion by Léon de Rosny, who has founded the *Société américaine de France* <sup>(1)</sup>, and in more recent times by the *Société des Américanistes de Paris* <sup>(2)</sup>, founded by Dr. Hamy; more still by the regular meeting, every two years of an International congress of Americanists, the *Comptes-rendus* of which already fill fourteen volumes. Here also must be named with the deepest feeling of gratitude, the noble Mæcenas of Mexican studies, the Duc de Loubat, who has not only published at his own expense and distributed among all the public libraries, elaborate fac-similes of nearly every picture manuscript, but has also subsidized a great number of various publications, founded and enriched museums, most liberally endowed professorships in several universities, and finally established a number of valuable prizes for the best books published on Mexican antiquities.

It is difficult to make a choice among modern workers; but no one would dream of omitting from a list such men as Eduard Seler, E.-T. Hamy, Orozco y Berra, Del Paso y Troncoso, Ant. Peñafiel and Alfredo Chavero <sup>(3)</sup>.

(1) Cf. "Archives de la Société américaine de France," Paris, Nouvelle série, 7 volumes and part 1 of vol. 8 (vol. i, 1875). Before that date Léon de Rosny's "Revue orientale" (Paris, 1858-1878, vol. i-xii and nouvelle série vol. i-xii) was practically the only French periodical devoted to American research.

(2) Cf. "Journal de la Société des Américanistes de Paris," since 1896.

(3) Besides Seler's great commentaries, *vide* his "Gesammelte Abhandlungen," of which three volumes have already appeared (vol. i, Berlin, 1902; vol. ii, 1904; vol. iii, 1908). Among E. T. Hamy's numerous works we may mention his edition of the "Codex

The United States, Mexico and France have had for years special periodicals exclusively devoted to American history and anthropology. No such periodical yet exists in Germany, a fact which is to be deeply regretted (1).

Borbonicus" (Paris, 1899), and of the "Coдекс Telleriano-Remensis" (Paris, 1899), his "Galerie américaine du musée d'ethnographie du Trocadéro" (Paris, 1897, in-fol.) and his collected essays ("Decades Americanae," Paris, 1888, 1898, 1902, 3 vols. in-8).—Del Paso y Troncoso has published a "Descripción, historia y exposición del código pictórico de la Cámara de Diputados de París" [*i.e.* Cod. Borbonicus] (Florence, 1899); various memoirs in the "Anales del Museo Nacional de México"; the catalogue of the Madrid exhibition (Madrid, 1892-1894, 2 vols.).—Antonio Peñafiel, "Cod. Fernandez Leal México, 1895"; "Lienzo de Zacatepec" (México, 1900); "Nombres geográficos" (México, 1885); "Nomenclatura geográfica de México" (1897); "Monumentos del arte antiguo mexicano," text 1 vol., atlas 2 vols. (Berlin, 1890, in-fol.); "Teotihuacán" (México, 1900, in-fol.).—Alfredo Chavero is the author of a number of large but not very important works and of the valuable text to the "Antigüedades Mexicanas," published by the "Junta Colombina" (México, 1892, in-fol.). The fac-simile and commentary of the remarkable "Lienzo de Tlaxcala" is of great interest for the history of the Conquista.

(1) A great number of important memoirs may be found dispersed in various periodicals: "Ausland, Globus, Petermann's Mitteilungen, Zeitschrift für Ethnologie, Archiv für Anthropologie," etc.

#### IV.

#### GENERAL WORKS ON MEXICO.

There exists quite a number of general works on Mexico. The books of Robertson <sup>(1)</sup>, Gallatin <sup>(2)</sup>, de la Renaudière <sup>(3)</sup>, Nadaillac <sup>(4)</sup>, Biart <sup>(5)</sup>, de Bussierre <sup>(6)</sup>, and Chevalier <sup>(7)</sup> have been partly superseded by the more modern and highly commendable publications of Klemm <sup>(8)</sup>, Waitz <sup>(9)</sup>, Bancroft <sup>(10)</sup>, Tylor <sup>(11)</sup>, Brantz Mayer <sup>(12)</sup>, Brühl <sup>(13)</sup>, and Herbert Spencer <sup>(14)</sup>.

(1) Robertson, "The History of America" (London, 1777, and Frankfurt-am-Main, 1828).

(2) Albert Gallatin, "Transactions of the American Ethnological Society," vol. i (1845) and ii (1848).

(3) M. de la Renaudière, "Mexique et Guatémala" (Paris, 1843)

(4) Marquis de Nadaillac, "L'Amérique Préhistorique" (Paris, 1883).

(5) Lucien Biart, "Les Aztèques, histoire, mœurs, coutumes" (Paris, 1885).

(6) Vicomte M. Th. de Bussierre, "L'empire mexicain, histoire des Toltèques, des Chichimèques, des Aztèques et de la conquête espagnole" (Paris, 1863).

(7) Michel Chevalier, "Le Mexique ancien et moderne" (Paris, 1863).

(8) G. Klemm, "Allgemeine Kulturgeschichte der Menschheit," vol. v (Leipzig, 1847), p. 1-254: "Die Staaten von Anahuac."

(9) Th. Waitz, "Anthropologie der Naturvölker," vol. iv (1864), p. 1-196: "Die Mexikaner."

(10) H. Bancroft, "The native races of the Pacific states of North America" (New York, 1837, 5 vol.). ✓

(11) B. Tylor, "Anahuac, or Mexico and the Mexicans ancient and modern" (London, 1861). ✓

(12) Brantz Mayer "Mexico, Aztec, Spanish and Republican" (Hartford, 1851, 2 vols.); "Mexico as it was and as it is" (New York, 1854).

(13) G. Brühl, "Die Kulturvölker Altamerikas" (New York, 1875-87).

(14) Herbert Spencer, "Los antiguos Mexicanos," traducido por

Brasseur de Bourbourg's ponderous history (1) contains much valuable information, but also many wild and misleading ideas. A man, named Majer, published in 1812 a little known but useful and clear compendium, very cleverly written (2). Konrad Hæbler's recent attempt to draw up in Helmolt's *Weltgeschichte* a short account of the whole of Central American civilisation, can hardly be considered successful (3).

The well-known and excellent volumes of Prescott (4) and Helps (5) are chiefly of a historical character, as are also those of Humboldt (6), and of Orozco y Berra (7).

Little scientific value may be attached to Chavero's brief summary of Mexican history and civilisation in the popular series *México a través de los siglos* (8).

Ad. Bastian's *Kulturlander des alten Amerika* contains many useful facts, but would be far more useful still if it were a little easier to read (9).

Count Carli's, *Lettres américaines*, may also be men-

Daniel Genaro Garcia (Mexico, 1876. Cf. also "Descriptive sociology or groups of sociological facts" (New York, s.a.).

(1) Brasseur de Bourbourg, "Histoire des nations civilisées du Mexique et de l'Amérique centrale" (Paris, 1857, 4 vols., in-8).

(2) Majer, "Mythologisches Taschenbuch," vol. ii, for 1813 (Weimar, 1812, in-12, p. 53-314).

(3) Konrad Hæbler, "Der mittelamerikanische Kulturkreis," in Helmolt's "Weltgeschichte," vol. i (Leipzig and Vienna, 1899), p. 225-289.

(4) W. H. Prescott, "History of the conquest of Mexico" (Boston, 1859, 3 vols.); often reprinted and translated.

(5) Arthur Helps, "The Spanish conquest in America" (London 1858-1861, 4 vols.); reprinted at London, 1900.

(6) A. von Humboldt, "Essai politique sur le royaume de la Nouvelle-Espagne" (Paris, 1811, 2 vols.) with an atlas; the same, "Kritische Untersuchungen über die historische Entwicklung der geographischen Kenntnisse von der Neuen Welt," translated by Ideler (Berlin, 1852, 3 vols.).

(7) Orozco y Berra, "Historia antigua y de la conquista de Mexico" (Mexico, 1880, 4 vols.), with an atlas.

(8) Alfredo Chavero, "Historia antigua y de la conquista de Mexico," in "México a través de los siglos," vol. i.

(9) Ad. Bastian, "Die Kulturländer des alten Amerika" (Berlin, 1878); cf. especially vol. ii.

tioned here (1). There are a number of histories of modern Mexico, but I will only refer here to the works of Lucas Alaman (2).

(1) Comte J. R. Carli. "Lettres américaines" (Boston, 1788, 2 vols.) and in a Spanish translation (Mexico, 1822).

(2) Lucas Alaman, "Disertaciones sobre la historia de la republica mejicana" (Mexico, 1844-1849, 3 vols.); "Historia de Mejico" (from 1808), (Mexico, 1849-1852, 5 vols.).

## V.

### ANTHROPOLOGY.

#### THE AGE AND ORIGIN OF THE "HOMO AMERICANUS."

Amongst other authors, Ehrenreich<sup>(1)</sup> has brilliantly set forth the shortcomings of anthropological studies in general and the absolute unreliability of all documents relating to American anthropology. His severe verdict holds particularly good for Mexico and it is absolutely premature to attempt in the present state of science anything like a definitive answer to practically any question in the field. And all the more so that most of the questions under discussion are of those which can be solved, not at the beginning of anthropological studies, but only in a very advanced stage of our knowledge on the subject. I cannot venture to give in this short pages a full bibliography of this branch of our researches; I have further no intention to tire the reader by columns of figures and formulæ, because I am quite convinced that it is impossible to condense in that shape an adequate description of the particularities of each portion of the human body<sup>(2)</sup>.

(1) Paul Ehrenreich, "Anthropologische Studien über die Urbewohner Brasiliens" (Braunschweig, 1897).

(2) The first attempt towards an anthropological (Somatology) bibliography of Mexico has been given by Nicolas Léon (Mexico, Museo Nacional, 1901, fol., 18 p.), naming 167 authors. The most important works on the subject are: E. T. Hamy, "Anthropologie du Mexique" in the "Mission scientifique au Mexique," vol. iii (Paris, 1884, in-4),



I cannot too strenuously insist on the fact, that anthropology in the usual acception of the term, has *no* other aim than an accurate anatomical study of man, and that nothing is more misleading, nothing is less reliable than a purely anthropological answer to questions in which linguistics and archæology are involved and *have* to be taken into consideration. It must also be kept in mind that anthropological geography is not, by any means, always identical with linguistic or ethnographical geography, and that there is a great difference between the study of a few scattered and ambiguous remains and the full survey of the compact mass of a well known and well defined population. For Mexico, fortunately, we build on solid rock, for not only is Mexican and Central American civilisation a distinct anthropological province, but also, curiously enough, a clearly marked territory as regards both fauna and flora.

The methods and aims of anthropology are badly known and still worse applied. People fail to comprehend the difference between *study* and *measurement*: they take anthropometry for anthropology, craniometry

and again: Paris, 1890; A. L. Herrera and R. E. Cicero, "Catálogo de la coleccion de antropologia del Museo Nacional de Mexico" (Mexico, 1895); F. Martinez Baca and M. Vergara, "Estudio craneométrico Zapoteca," in the Actes of the xith International Congress of Americanists (Mexico, 1897), pp. 237-264; Karl Scherzer, "Resultate auf dem Gebiete der Anthropometrie" in "Petermann's Mittheilungen," vol. iv (1879); Sapper, "Archiv für Anthropologie," new series, vol. iii, pp. 11 seqq.; Fr. Starr, "Physical characters of Indians of Southern Mexico," in the "Decennial publications of the University of Chicago," vol. ix (1902); E. T. Hamy, "Les races malaïques et américaines" in "L'Anthropologie," 1896; Brinton, "The American race" (New York, 1892, in-8); R. Virchow, "Crania ethnica americana," Berlin, 1892; S. G. Morton, "Crania Americana" (Philadelphia, 1839); Quatrefages et Hamy, "Crania ethnica" (Paris, 1882); M. Krause, "Zwei Schädel [Totonac] von Cerro Montoso" in Strebel, "Alt-Mexico" (Hamburg, 1885); J. Nitken-Meigs, "Observations on the craniological forms of the American aborigines" in the "Proceedings of the Academy of natural sciences of Philadelphia," 1866; the works of Leopold Batres are to be made use of with caution.

for craniology, and keep on measuring bones instead of looking at them.

It would be folly to deny the usefulness of the measuring system: it is great thing to be able to describe a concrete bone by an abstract figure, the mathematical accuracy of which enables us to draw up lists and statistical tables, to classify and arrange types, and even to deduce laws, in which the most complicated shapes are expressed by rows of numbers.

But can we, on the other hand, overlook that the shapes of flesh and bone are so complicated and so widely differentiated from mathematical figures, that it is hardly possible in many cases to express in figures what the eye or the camera can grasp at a single glance. Craniometry, for instance, labours under tremendous disadvantages. Not only is the development of each portion of the skull a matter of great complexity, not only are these elements exceedingly numerous, but also is their relative position to be minutely studied and measured, because the final shape of the skull depends on the size and form of each portion and also on their *disposition*. The more you reduce the number of measurements, the greater are the chances of error; the more you increase it, the more difficult to understand are your statistical tables.

If the skull were a crystal, three numbers would suffice for an exhaustive description. As it stands, however, each of the twenty-two bones which compose it, has a shape and a history of its own and often a complicated one. Would it not prove advisable, instead of attacking at once such a complex as the skull taken as a whole, to begin by the elaborate study of a single portion of it, of a single bone, in as many skulls as possible, in as many races as possible and not only on adults, but also on the *foetus*.

I cannot therefore attach great importance to the

various published tables, containing measurements of Mexican skulls as I do not believe it possible to deduce from them any definite and tangible results.

Other difficulties are caused in Mexico by the current and constant custom of artificial deformation of the infant's skulls <sup>(1)</sup>; also by the great scarcity of any early Mexican skeletons, a fact due chiefly to cremation of dead bodies, which, however, in Mexico only seems to have taken place after certain kinds of death <sup>(2)</sup>.

It is difficult to lay much weight on the somewhat artificial distinction of a dolichocephalic and a brachycephalic race and when Hamy <sup>(3)</sup> contends that the latter predominates in North America, we hardly need to remind him of the remarkable variety shown by skulls of mound-builders from any single burial place. It would seem on the contrary that Squier and Emil Schmidt <sup>(4)</sup> are on the right side, when they consider this great variety in individual skulls, this *Poikilotypie*, to use the word proposed by Lehmann-Nitsche, as the constant characteristic of American craniology, an opinion also repeatedly expressed by Virchow <sup>(5)</sup>.

(1) G. Retzius, "Om Cranier af s. k. longhead-Indianer," in "Ymer," vol. xv (1896), pp. 259-271; D. Wilson, "Prehistoric Man," ii., p. 204 seqq.; F. Delisle "Contributions à l'étude des déformations artificielles du crâne" (Paris, 1880, in-8); R. Virchow, "Comptes-rendus of the Seventh International Congress of Americanists" (Berlin, 1888), p. 251; *ibid.* Tenth Congress, p. 27-28 and 44; Emil Schmidt, "Vorgeschichte Nordamerikas," p. 22.

(2) A. Hrdlička, "Descripción de un antiguo esqueleto humano anormal del valle de México" in "American Association for the advancement of science," 13th August, 1897.

(3) E. T. Hamy, "Sur la prédominance du type brachycéphale dans les deux Amériques et notamment dans le Nord," in the Comptes-rendus of the Seventh International Congress of Americanists" (Berlin, 1888), pp. 261-262.

(4) Cf. the excellent memoir of the late Emil Schmidt, "Die vorgeschichtlichen Indianer Nordamerikas östlich von den Felsengebirgen," in his "Vorgeschichte Nordamerikas" (Brunswick, 1894), p. 121; cf. Lehmann-Nitsche, "Archiv für Anthropologie," new series, vol v. (1906), p. 115.

(5) R. Virchow, Comptes-rendus of the Seventh International

A good example of a highly prejudiced method rightly condemned by Ehrenreich is supplied by the views of Retzius<sup>1)</sup> who discovers vague analogies between the Americans, Guanches, Tuaregs and Copts, and of course calls to his help the favourite Atlantis legend. He does not agree with Morton in considering the American races and languages as a single group; he divides them into two distinct currents: the dolichocephalic "American Semites" with African connections, in the West Indies and along the East coast of America—and the brachycephalic "American Mongolidæ"<sup>2)</sup> of Asiatic and South Sea origin, in the Kurile islands and along the West coast|.

These theories, which on the whole are too vague to be either disproved or corroborated, had been started before Retzius by Angrand, who had evolved a whole history of American civilisation<sup>3)</sup>. According to his fanciful imagination, the Mexicans originally came from Idaho, in the United States, and gradually migrated along the Pacific coast down to Guadalaxara and Xalisco; from the fourth century A.D. onwards, they founded the great towns of Southern Mexico such as Tollan. Angrand further distinguishes two civilizing currents: the Floridian group or "Toltèque oriental" comprising the Mayas, Totonacs, Caraibs, Quichuas and "West Indians" generally; on the other hand, the Californian group or "Toltèque oriental," including the Pueblos,

Congress of Americanists (Berlin, 1888), pp. 251-260; Third Congress (Brussels, 1879), vol. ii., p. 153 seqq.

1) A. Retzius, "Annual Report of the Smithsonian Institution," vol. xiv. (1860), p. 266.

2) The alleged analogy between Americans and Mongols has been so often and so recklessly asserted that it has been the cause of much trouble both in ethnology and in linguistics; many prejudiced views are due to this fancy, which is continually cropping up with a singular tenacity.

3) L. Angrand, "Lettre à Mr. Daly sur les antiquités de Tiaguanaço," in "Revue générale de l'architecture," vol. 24.

Aztecs, Tlaxcaltecs, Quiches, Muyscos, etc., and also the early inhabitants of Tiahuanaco.

Cyrus Thomas himself<sup>(1)</sup>, but solely on archæological grounds and in the archæological sense, distinguishes in prehistoric American civilisation the Atlantic and Pacific types; he deduces from it a double current of migration along the two coasts of the continent.

According to J. W. Foster<sup>(2)</sup> the brachycephalic Aztecs had a number of free fights with the dolichocephalic representants of an earlier civilisation (he doubtless means the Toltecs); in the end the short-headed nations got the better.

Even Hamy could not always manage to steer wide of such fanciful constructions, for instance when he believed in an original brachycephalic race extending from California to the Isthmus<sup>(3)</sup>. Dolichocephalic tribes from the South then conquered, according to him, these earlier inhabitants who were also gradually brought to a dolichocephalic type by the historically established invasions of Northern dolichocephalic Indians, especially in the northern provinces (Mounds, Cliffs, Pueblos). He made out two early and nearly parallel influences: on one side the Prairie Indians and Chichimecs; on the other the Aztecs, Tepanecs and Acolhuas, both bringing with them their dolichocephalic type and gradually superseding in various parts the earlier brachycephalic race<sup>(4)</sup>.

(1) Cyrus Thomas, "Prehistoric remains in America," in "Science" (New York), vol. xxi., p. 178 and p. 246 seqq.

(2) J. W. Foster, "Prehistoric races" (1873), p. 340.

(3) E. T. Hamy, "Les races malaiques et américaines" (Paris, 1896).

(4) On the other hand, Sergi makes a distinction between the cranial types of asiatic, oceanic and aboriginal origin ("Atti della Società romana de anthropologia, 1906"). Padre Barnabé Cobo, working on the eminently correct presumption that, when discovered by the Spaniards, Mexico, as other parts of America, was sparsely inhabited on account of the extensive llanos, lagunes and forests, and of the narrow cultivated strips of land, divides the population

For Teobert Maler <sup>(1)</sup>, the *officina gentium* is to be sought for in the far North, in the centre of the United States. He also makes the Toltecs and Aztecs overcome an earlier autochthonous race; that is to say, he calls "autochthonous," races without migration myths. But however disputable such a definition may be in itself, it can by no means be applied to the Tarascs, Mayas, Tzendals, Quiches, Tzapotecs and Mixtecs, as all these nations, even the two last have well defined traditions of an earlier home. Such a definition would have been easier to maintain in the case of the Otomis or the Totonacs.

Conjectures, such as those we have just mentioned, show well how unsafe and often how uncritical is our present knowledge of the earliest inhabitants of Mexico.

Instead of accumulating positive evidence by confining research to the strictly anthropological field of craniology or anthropometry, writers have too often taken a broader view of the problem, and stepping over the boundary of anatomy proper, have investigated the far more intricate problems relating to the origin of the Mexican and other American races, problems which require the combined efforts of the philologist, the ethnologist, the archæologist and even the palæontologist.

The old commonplace affirmation of the unity of the American race can only be accepted as referring to the first men who came to this enormous continent. The present variety of the existing races is not to be

into nomads, small clan republics and larger political groups; though reposing on social considerations, and, therefore, fairly near the truth, this thesis is hardly sufficient by itself to account for such a number of different linguistic variations. Cf. Cobo, "Historia del Nuevo Mundo," published by D. Marco Ximenez de la Espada (Sevilla. 1890-1895, 4 vols.).

(1) Teobert Maler. "Notes sur la race Mistèque," in the "Revue d'ethnographie" of Paris, vol. ii. (1883), pp. 154-161.

disputed<sup>1)</sup>, although we must take care not to consider as racial features such characteristics as may be due to some local influence.

This illustrates the importance of geographical conditions: it is hardly doubtful that land and climate, fauna and flora have done much to transform the original early immigrant, who was perhaps quite of a neutral type, into the *Homo Americanus*, that is to say, something different from the rest of mankind.

It is not advisable to attempt classification of races by confining observations to the colour of the hair and eyes, or to the constitution of a hair. Somatology has a perfect right to separate types, but the decisions of that science has only become final when supported by corresponding linguistic or ethnographical particulars.

Unfortunately very little has yet been done<sup>2)</sup> to ascertain in a methodical and scientific way the physical peculiarities of the Mexican tribes, so that there is still ample room for research and perhaps for productive research. It is not putting the facts too strongly to openly declare: "The fields of Mexican anthropology are still untrodden."

(1) Cf. Virchow, *Comptes-rendus of the Third International Congress of Americanists* (Brussels, 1879), vol. ii., p. 153 seqq.; H. ten Kate, "Sur la question de la pluralité et de la parenté des races en Amérique," in the *Comptes-rendus of the Eighth International Congress of Americanists* (Paris, 1890), pp. 288-294; Fr. Gregorio Garcia in his monumental "Origen de los Indios" (Madrid, 1729), f. 215, had already expressed the opinion "que los Indios ni proceden de una nacion i gente . . . sino que realmente proceden de diversas naciones." The same idea was expressed by the celebrated Eusebius Nieremberg in his "Historia naturae maxime peregrinae" (Antwerp, 1635), book v., cap. 2, f. 72-74. Cf. also Fritsch, "Frage nach der Einheit oder Vielheit der amerikanischen Eingeborenen geprüft an der Untersuchung ihres Haarwuchses," in the *Comptes-rendus of the Seventh International Congress of Americanists* (Berlin, 1888), pp. 271-281.

(2) Cf. F. Starr, "The Indians of Southern Mexico, an ethnographical album" (Chicago, 1900, in-11, with 111 plates; Morton, "An inquiry into the descriptive characteristics of the aboriginal race of America" (Philadelphia, 1844).

Such particularities as the painting of skeletons, the filing and stopping of teeth, the deformation of skulls fall really under the heading of ethnography. As we have already observed, the purely anatomical problems are hardly ever kept apart and studied by themselves, but continually mixed up with ethnological questions. Another common feature of anthropological research is the undue attention given to the highly cultivated tribes, such as the Mexicans, Mayas or Peruvians, the "savages" of an inferior grade being generally left aside, as if the origin of a given form of civilisation was one and the same thing as the origin of the men who used it.

Another important item is the degree of reliability we may attach to the Indian migration-myths. Such traditions may often be of the highest importance; they may in many cases lie on a background of solid historical fact; it is nevertheless dangerous to build on them without the necessary confirmations to be derived from archæology, linguistic and another sources. In these branches many mad theories were evolved almost as soon as America was discovered. Myths relating to the origin and wanderings of the Mexicans have after all but a local importance; archæological evidence, now we are able to sift it in a scientific way, teaches us that such traditions are overshadowed by a far greater problem: before we examine from *where* man came into America, we must first of all find out *when* he came. If he was already there in the post-glacial period, what is the use of trying to derive him<sup>(1)</sup> from the Hebrews, Phœnicians, Egyptians, Mongolians or others.

(1) The typical work in that line is Manasseh ben-Israel's "Origen de los Americanos, Esperanza de Israel" (Amsterdam, 1650), reprinted at Madrid in 1881 with a copious bibliography; cf. also Lord Kingsborough's "Argument to show that the Jews in early ages colonised America" ("Mexican antiquities," vol. vi.) and G. d'Eichthal's "Etudes sur les origines bouddhiques de la civilisa-



Let us then examine first of all the important problem of man's age in America; the evidence will be supplied not only by ruins but by relics of human industry and also by human bones in early layers, occasionally with remains of extinct animals.

The industrial relics, which in various places may be found on or below the surface, are chiefly made of stone, pottery, shell or metal.

It is hardly advisable to adopt for the classification of American and especially Mexican, stone or metal implements, the customary European terms of "stone-age" or "bronze-age" (2). A bronze age in North America is for instance quite out of the question: an intentional alloy of copper with an appreciable percentage of tin has never been met with in Mexico or in Central America and of

tion américaine" (Paris, 1865). The appalling extent of this particular literature illustrates in a striking manner the natural propensity of writers to prefer in all times fantastical conjectures to solid scientific research. To the same class of myths belong the stories relating to the Apostle Saint Thomas, supposed to have evangelized America, and identified with the mythological Toltec hero Quetzalcouatl by such an earnest and sober scholar as Sigüenza y Gongora (cf. the prologue to his "Parayso Occidental," Mexico, 1680).

A first-class modern student like Beauvois finds no difficulty in making out Quetzalcouatl to be an Irish monk, and "ultima Thule" to be the Mexican city of Tula (Comptes-rendus of the Fifth International Congress of Americanists, Copenhagen 1883, p. 85, and elsewhere in his works). Not less fantastical is the conjecture identifying Mexico with Fusang, a far-off land mentioned in the old Chinese annals; this identification has been finally disposed of by G. Schlegel, "Problèmes géographiques" in "Toung Pao," vol. iii. (Leiden, 1892), pp. 101-168.

The mythical Atlantis of Plato has been more than once called upon by Americanists trying "to explain things"; cf. for instance Ignatius Donnelly, "Atlantis, the antediluvian world" (New York, 1882, in-8), and the bibliography given by H. Martin, "Etudes sur le Timée de Platon," i, p. 257 seqq.; but these wild theories have been successfully done away with by Charles Ploix, "Revue d'anthropologie," 1887, p. 291 seqq.; by G. de Mortillet, "Le pré-historique," p. 124, and in his "Formation de la nation française," p. 15-30.

(2) Cf. "Die Bronzezeit Amerikas" in "Ausland," 1867, n. 24.

course not in the countries inhabited by red Indian tribes (1).

We cannot even speak of a copper-age proper. The Indians of North-America made and used copper implements and vessels simultaneously with stone knives and hatchets, and commercial intercourse between the tribes greatly aided to the dispersion of copper either in ingots or worked by hand (2). In America, the stone-age was in no way superseded by the copper-age, but even the highly developed civilisations of Mexico and America are still decidedly in the stone period. If I may be allowed to contradict an observation made by Montelius (3), the great savant ought hardly to have said: "The bronze

(1) Cf. Seler, *Comptes-rendus of the Tenth International Congress of Americanists* (Stockholm, 1894), pp. 7-8. The alleged Mixtec bronze discoveries are of questionable authenticity. The "Xipe de bronze de Palemke" in Chavero's collection ("*Anales del Museo de Mexico*," vol. v, plate facing p. 296) is a glaring forgery. A. B. Meyer's analysis of a "hache de bronze trouvée à Atotonilco" ("*Revue d'ethnographie*," vol. vi, p. 518) gave only 1.91 of tin against 98.05 copper. This is supported by another analysis of a chisel containing 97.87 copper and 2.13 tin with faint traces of zinc and gold (Gomezindo Mendoza, in Penafiel's "*Monumentos del arte antiguo mexicano*," chap. iv., fol. 20); neither of these alloys can claim to be real bronze. J. F. Ramirez quotes a bronze axe in the Museo Nacional at Mexico, containing between 9 and 10 per cent tin according to an analysis made for him ("*México y sus Alrededores*," 1855-1856, n. 21, fol. 34). But is the latter entirely reliable or is perchance the object later than the Conquista?

(2) Cf. the excellent memoirs of R. Andree, "*Die Metalle bei den Naturvölkern mit Berücksichtigung prähistorischen Verhältnisse*" (Leipzig, 1884), p. 128-160, and of Emil Schmidt, "*Die prehistorische Kupfergeräte Nordamerikas*," in his "*Vorgesichichte Nordamerikas*" (1894), pp. 47-99; J. J. A. Worsaae, "*Fra steen og bronzaldern i den gamle og den nye Verden*," in the "*Aarbøger for nordisk Oldkyndighed og Historie*," 1879, pp. 249-357, and translated into French by E. Beauvois, "*Mémoires de la Société des Antiquaires du Nord*," new series, 1880 (Copenhagen), pp. 111-244. On commercial intercourse cf. Carl Rau, "*Archiv für Anthropologie*," vol. v. (1872), pp. 1-48.

(3) Oskar Montelius, "*Die Kulturentwicklung Amerikas im Vergleich mit derjenigen der Alten Welt*," in the *Comptes-rendus of the Tenth International Congress of Americanists* (Stockholm, 1894), pp. 1-8 *vide* p. 4.

age ends in America about 1500 A.D., and in the East about 1500 B.C." He ought rather to have put it as follows: "The stone age ends in America about 1500 A.D. and in Europe about 2000 B.C." This gigantic difference of over three thousand years, proves alone how unwise it would be to establish an inmate connection between Old and New World culture.

It may further prove advisable to divide the metal period (copper and gold) into two distinct stages; in the former, the native metal was beaten and hammered into shape, while in the latter, it was more or less artistically cast into moulds; the latter period is particularly well illustrated in Mexican civilisation.

The stone age <sup>(1)</sup> may also be divided into two periods and the old European division of chipped and polished flints, holds good in America; in the New World as in the Old man shaped flints with stone hammers, before he learnt how to grind and polish them. It does not seem practical, however, to distinguish among palæoliths the *Chelléen* and other types as in Europe <sup>(2)</sup>, because of the misleading chronological signification attached to them in the Old World and because in America the succession of forms may not be the same.

We reach here the slippery ground of the chronological and synchronological problems <sup>(3)</sup>; even if well authenti-

(1) Cf. Th. Wilson, "Rep. Nat. Mus.," 1887-1888, pp. 677-702 (on the existence of man during the palæolithic period); Th. Wilson, "La période paléolithique dans l'Amérique du Nord," in the Comptes-rendus of the Eighth International Congress of Americanists (Paris), pp. 660-669; McGee, "Palæolithic man in America," in the "Popular Science Monthly," vol. xxxiv. (1888); C. C. Abbotts, "Primitive Industry" (Salem, 1881) and other memoirs; Brinton, "On palæoliths, American and other," in his "Essays of an Americanist" (Philadelphia, 1890), pp. 48-55.

(2) C. C. Abbott, "Primitive Industry," cap. 32 and 33.

(3) Brinton, "A review of the data for the study of the prehistoric chronology of America" (Salem, 1887, in-8); "Essays of an Americanist," pp. 29-47; "The American race," p. 33; E. Schmidt,

ated diluvial palaeoliths have been discovered in America, it is still impossible to date them even approximately. The same may be said for the neolithic alluvial flints and especially for those found in shell heaps, the antiquity of which ought by no means to be overrated.

The absence of historical facts giving us an insight into prehistoric America, makes the dark unchronicled period *end* far later than in the Old World, but surely it *began* quite early enough.

The origins of the stone age go far back into the diluvium, and, at any rate, as far as the post-glacial period, only doubtful evidence being available for the first glacial, inter-glacial and second glacial epochs. McGee's attempt to connect *chelléen* and *moustérien* with the *inter-glacial* and *champlain* periods is doubtless suggestive, but as yet a little venturesome <sup>(4)</sup>.

The evidence of worked objects may be in a manner completed by human remains. Hrdlička has recently disputed the great antiquity assigned to such relics as the Californian skull of Calaveras <sup>(5)</sup>, but no one doubts

“Chronologie des diluvialen Menschen {in Nordamerika,” in the Comptes-rendus of the Seventh International Congress of Americanists (Berlin, 1888), pp. 281-297.

(4) Cf. McGee, “Popular Science Monthly,” November, 1888 (on the synchronism of the quaternary epoch in Europe and North America).

(5) Cf. J. W. Foster, “Prehistoric races” (1873), p. 54; Brinton, “The American race,” p. 24; J. Kollmann, “Zeitschrift für Ethnologie,” vol. xvi. (Berlin, 1884), p. 181 seqq., with a bibliography, pp. 210-212; Emil Schmidt, “Die ältesten Spuren des Menschen im Gebiete der Vereinigten Staaten” in his “Vorgeschichte Nordamerikas” (1894), pp. 1-44.

On the newly discovered “Lansing man” (Kansas), cf. Williston, Comptes-rendus of the thirteenth International Congress of Americanists (New York, 1905), pp. 85-89; Holmes, “Amer. Anthr.,” new series, vol. iv, p. 143; A. Hrdlička, *ibid*, vol. v, p. 329.

Cf. also R. J. Farquharson, “The contemporaneous existence of man and the mastodon in America,” in the “American Association” (Boston, 1880); P. Topinard, “L'homme quaternaire de l'Amérique du Nord” in the “Revue d'Anthropologie,” 1887, pp. 483-491; H. C. Lewis, in “Science,” 16 october 1880.

seriously that man in South America was contemporaneous with the mastodont and other extinct animals (1).

Few important finds of this period have been made in Mexico. The most remarkable is certainly the fossil man of Peñon, near Mexico (2), supposed to have been discovered in a quaternary layer; we may also mention the find of Quinta del Atillo (3), the footprints of Amanalco (4), other footprints in a tuffo-stratum near the lake of Managua, in Nicaragua (5), and a presumed cut lama-

(1) Cf. Florent. Ameghino, "L'homme préhistorique dans la Plata," in the "Revue d'anthropologie," April, 1879, the same, "Armes et instruments de l'homme préhistorique des Pampas," *ibid.*, 1880, pp. 1-12; "De l'homme tertiaire en Amérique," in the Comptes-rendus of the third International Congress of Americanists" (Brussels), vol. ii, p. 198-249 (on Mexico, p. 203 seqq.); J. Vilanova, "L'homme fossile du Rio Samborombon" in the Comptes-rendus of the eighth International Congress of Americanists" (Paris), pp. 351-352; A. de Quatrefages, "L'homme fossile de Lagoa-Santa en Brésil et ses descendants actuels," in the "Congrès d'Anthropologie de Moscou," 1879.

(2) Cf. M. Barcena, "The American Naturalist," vol. xix (1885), pp. 736-744; "La Naturalesa," vol. vii (Mexico, 1887, pp. 257-264; "Globus," vol. 50, p. 192; M. de Villada, "Añales del Museo Nacional de Mexico," vol. vii, pp. 455-458; cf. also E. T. Hamy, "L'ancienneté de l'homme au Mexique" in "La Nature," Paris, 1878, pp. 262-264; J. Sanchez, "Anuario de la Academia Mexicana de ciencias exactas," vol. iii (1897), pp. 199-219; A. L. Herrera, "El hombre prehistorico de Mexico," in the Mem. Soc. Cient "Ant. Alzate," vol. vii (1893), pp. 17-93 (especially pp. 40-43); M. Barcena, Acts of the Eleventh International Congress of Americanists (Mexico, 1897), pp. 73-78; MM. Villada, "Exploracion à la cuenca fosilifera de San Juan Raya (Est. de Puebla)" in the "Añales del Museo Nacional de Mexico," 2a epoca, vol. ii, pp. 126-164; MM. Villada, "Informe... para estudiar un antiguo depósito natural de supuestos huesos humanos en un lugar del Estado de Coahuila" in the "Boletin del Museo Nacional de Mexico," 2a epoca, vol. i (1903), pp. 169-178; W. H. Holmes, "Evedences of the antiquity of man on the site of the city of Mexico," in the "Transactions of the Anthropological Society" (of Washington), vol. iii (1885), pp. 68-81; J. Manzano, in "Memoria del Ministerio de Fomento," Mexico, 1870, p. 307; Riley, "Prehistoric remains in Mexico" in the "Transactions of the Anthropological Society" (of Washington), 1881.

(3) Cf. M. Villada. *loc cit.*

(4) Jes. Sanchez, Acts of the Eleventh International Congress of Americanists (Mexico, 1897), pp. 393-396.

(5) Carl Flint, "The American Naturalist," 1885; cf. Brinton,

bone from Tequixquiac (6). Unfortunately, all these discoveries are open to various objections, and it is questionable whether a high geological antiquity may, for instance, be ascribed to the footprints. New and reliable evidence is greatly to be desired.

The variety shown by the known prehistoric skulls and their resemblance to the skulls of the modern Indians has led Kollmann (7) to believe that man existed in America as early as the end of the ice age; if such is the case, and the alleged resemblance stands the test, we may then perhaps agree with Brinton's theory and allow that the *area of characterization* (i.e., the place where the present characteristics of the American race were evolved) may be looked for the East of the Rocky Mountains, in the belt of land between the Gulf of Mexico and the ever receding great continental ice-mass (8).

The ice age in America (9), and particularly in North America, where it was perhaps contemporaneous with the European ice-age (10), has had a considerable influence, not only on the land, but also on its inhabitants: men, animals and even plants (11); it obliged them to migra-

"Proceedings of the American Philosophical Society," Philadelphia, 1887, p. 437.

6) M. Barcena, "Añales del Museo Nacional de Mexico," vol. ii., pp. 439-444.

(7) "Zeitschrift für Ethnologie," vol. xvi., p. 181 seqq.

8) Brinton, "The American Race," p. 35.

(9) J. Fr. Wright, "The ice age in North America" (New York, 1890); James Geikie, "The great ice age and its relation to the antiquity of man" (London, 1874); James Croll, "Climate and Time"; F. D. Dana, "Textbook of Geology" (New York, 1883).

(10) W. Köppen observes that the relative latitudes of remains of the ice age in Europe and America coincide with the present isothermic lines, and infers from it that the glacial period was due to a diminution in the heat derived from the sun, and that it occurred simultaneously either for the whole earth or for the Southern and Northern hemisphere, respectively. (Cf. his "Klimalehre," Leipzig, 1899, pp. 28-26.) On the contrary, James Croll ("Climate and Time") contends that the glacial period came later in America than in Europe.

(11) On the glacial period and man in North America, cf. Brinton,

tions which are more clearly recognisable for the fauna and flora than for human beings. Easy communication between the various parts of the continent has, according to Deckert<sup>(12)</sup>, favoured the ebb and flow of the tribes and, while differentiating their language and customs, has unified their racial particularities both in mind and in body.

But where did these early inhabitants come from? Have they developed naturally in America from some anthropoid ape? The chief objection to this view is the peculiar type of all known American monkeys, with their thirty-six teeth, flat nose and prehensile tail; man is therefore an immigrant in America. Here we meet with two geological possibilities. On one side, at a given epoch of the Diluvium, Asia and America were connected by a broad stretch of land in the neighbourhood of the Behring Straits; that is how the mammoth came from Siberia to Canada<sup>(13)</sup>.

“The American Race,” pp. 34-35; B. F. de Costa, “Glacial man in America” in the “Popular Science Monthly,” November, 1880; Sidney Skerchly, *Comptes-rendus of the Third International Congress of Americanists* (Brussels, 1879), vol. ii., pp. 164-167; Nadaillac, “Matériaux pour l’histoire de l’homme,” 3rd series, vol. i. (1884), pp. 140-155.

As regards zoological geography, the influence of the glacial period is still recognisable; the glacial cap which formed, when it melted, the great lakes of America, had its southern border along the 45th degree of latitude, a line which still marks, not only the northern limit of agriculture in the New World, but also the southern frontier of the holarctic fauna of the Old World and of the neoboreal fauna of America. For the influence of the glacial period on the flora, cf. Hans Meyer’s important paper: “Die Vorzeit des Menschen in äquatorialen Andengebieten” in the *Comptes-rendus of the Fourteenth International Congress of Americanists* (Stuttgart, 1906), vol. ii., pp. 47-56.

(12) Emil Deckert, “Nordamerika,” 2nd edition (Leipzig and Vienna, 1904), p. 90.

(13) Cf. Fritz Frech, “Studien über das Klima der geologischen Vergangenheit” in “*Zeitschrift der Gesellschaft für Erdkunde*,” 1906, pp. 547-548, and J. W. Foster, “Prehistoric Races,” 1873, p. 91.

On the other hand, as early as the Eocene, all through the Miocene, and even as late as the Pliocene period a circumpolar continent joined Europe, Asia and America<sup>(1)</sup>. The existence of this land explains for R. Andrée<sup>(2)</sup> the dispersion of man throughout the globe.

The great analogy of the Miocene and Pliocene fauna in the Old and New World, has led Jos. Leidy<sup>(3)</sup> to admit that animals migrated from Asia to America during the tertiary period. Whatever the case may be, the arrival of man on the American soil took place so early that the American race may be considered safely as autochthonous<sup>(4)</sup>, a view which has been ably supported by Léon de Rosny, Lucien Adam<sup>(5)</sup> and others.

The same result may be indirectly attained by the careful study of various diseases which were indigenous in Central America before the conquest and unknown till then in Europe, whereas, others, for instance small-pox, were apparently brought to the New World by the

(1) A. J. Jukes-Browne, "Building of the British Isles" (London, 1888).

(2) R. Andrée, "Mitteilungen der anthropologischen Gesellschaft zu Wien," vol. xxxiv., "Sitzungsberichte," p. 87 seqq.

(3) Jos. Leidy, "On the extinct mammalian fauna of Dakota and Nebraska."

(4) The specific peculiarity of the American flora and fauna, of the inhabitants, their manners and customs had been asserted long ago by Ignacio Ramirez, "Boletin de la sociedad de geografia y estadística," 1872. José Ramirez supports the same view when he observes that out of 200 botanical families, 172 are represented in Mexico. The American flora has become more and more complicated because of the great number of minor varieties. If we believe Hemsley the "Compositæ" are represented there by 215 kinds and at least 1518 species! And yet the "Compositæ" are hardly a tenth of the total vegetation. Cf. the Comptes-rendus of the Eleventh International Congress of Americanists" (Mexico, 1897), pp. 360-363. A. von Humboldt further observes ("Ideen zu einer Physiognomik der Gewächse" (that the Cactus-form is peculiar to America.

(5) Léon de Rosny, Comptes-rendus of the First International Congress of Americanists" (Nancy, 1875), vol. i, p. 134 seqq.; Lucien Adam, *ibid.*, p. 161.



Spanish invaders. This is a good proof that since a very yearly date no intercourse had taken place between the two continents (1).

The so called "Mongolian spot," observed not only on the Mongolians proper (2), but also on Eskimos, Red Indians, and Mayas (3), has lost much or all value as a "racial landmark" (4), since it has been found in Samoa and even in Europe (5).

On the contrary, the genuine *Os inca* seems really to be a characteristic of the American race, although the want of extensive collections of skulls is a great obstacle to any decisive conclusion. Its occasional occurrence in Mexico must be carefully looked for. The percentage in Arizona of the *Os inca completum* is stated to be 5,68 (6).

We must also pay attention to Schlaginhaufen's remarkable observation that the Mayas of Yucatan show more primitive shapes than the West African negroes, in the disposition of the papillary lines and the structure of the skin of the sole (7).

(1) Montejo y Robledo, "Acts of the Sixth International Congress of Americanists" (Madrid, 1882), pp. 334-416; Iwan Bloch, *ibid.*, xiv (Stuttgart, 1906), vol. i, pp. 57-70; Ed. Seler, "Gesammelte Abhandlungen," vol. ii, pp. 94-99.

(2) For the bibliography of the subject, cf. R. Lehmann-Nitsche, "Globus," vol. 85 (1904), pp. 297-301, and vol. 88, p. 112; H. ten Kate, *ibid.*, vol. 81 (1902), pp. 238-241 and 87 (1905), pp. 53-58.

(3) Fr. Starr, "The sacral spot in Maya Indians," in "Science," new series, vol. xvii (1903), pp. 432-433.

(4) Bälz, "Zur Frage der Rassenverwandtschaft des Indien, Mongolen und Americaner" in "Zeitschrift für Ethnologie, Verhandlungen," 1901, p. 393.

(5) Adachi and Fujisawa, "Zeitschrift für Morphologie und Anthropologie," vol. vi (1903), pp. 132-133; Adachi, "Anatomische Anzeigen," vol. xxii (1902), pp. 323-325.

(6) Washington Matthews, "The Inca bone and kindred formations among the ancient Arizonians" in the "American Anthropologist," 1899, pp. 337-345. He makes the percentage in Arizona to be 5,68, in Peru 5,46, and in "Americans not Peruvians" 1,30 per cent.

(7) O. Schlaginhaufen, "Das Hautleistensystem des Primaten-

Another important detail may help to establish the exact antiquity of man in America; the history of Indian corn which is closely connected with all the higher civilisations of the New World. G. Gerland <sup>8)</sup> has remarked that maize offers far less resistance to the variations of climate than our cerealia, its northern limit in America being about the 50th degree of latitude, whereas barley reaches as far North as the 70th. Its inaptitude to develop into a winter plant is a proof that it has not been cultivated by man at a very early date or it would surely have accommodated itself to climate as easily as barley. In spite of its numerous varieties it has become far less adapted to mankind's wants than our cerealia; it is therefore more modern as a cultivated plant, a conclusion to which may also arrive, if we examine the fluctuations of its varieties. As Gerland puts it, "the whole history of its growth shows that a nation of immigrants found it and used it." As a matter of fact, Indian corn is very different in North and South America, with the exception of the pointed-ear maize which is to be found with numerous variations not only in Peru, but also in Mexico <sup>9)</sup>. The tunicated maize *Zea mays tunicata* St. Hil. is not a prototype of maize but, according to Wittmack, a species grown wild (Vergrünung). The long sought for original wild variety has been discovered by Rossignon in the *Euchlæna luxurians* of Guatemala <sup>10)</sup>.

We reach now the much disputed question of the

planta," in the "Morphologisches Jahrbuch," vol. 33-34 (1905), pp. 577, 671 and 1-125.

<sup>8)</sup> G. Gerland, "Anthropologische Beiträge," vol. i (Halle a. S., 1875), pp. 112 seqq.

<sup>9)</sup> L. Wittmack, "Ueber antiken Mais aus Nord- und Südamerika," in the "Zeitschrift für Ethnologie," vol. xii (1880), pp. 85-97.

<sup>10)</sup> Ascherson, "Sitzungsberichte der Gesellschaft naturf. Freunde" Berlin, 1876, p. 160.

origin of the wonderful Mexican and Central American civilisations. There is hardly a nation of the Old World which has not been brought into connection with them at one time or another by enthusiastic searchers. Such idle phantasies have nothing to do with real science, and no convincing connection has yet been discovered between the languages of the Old and New World. Merely superficial analogies can in no way allow us to derive American civilisation from Europe and Asia. And we are at loss to imagine how the alleged influence could have taken place; it must have been at a date when the metropolis itself had already reached a high degree of culture<sup>(1)</sup>; and how could it then have reached America, apart from such exceptional accidents as shipwrecks, winds and tides? Who could believe in a regular nautical intercourse? The land route over the Behring straits was only open during the Diluvium, and had Asiatic tribes made use of it in those early times, how would they have left no traces of their passage in any of the countries between Alaska and Mexico, why would they have reserved to Mexico and Yucatan the sole benefit of their civilisation. And if they came, they must have come in thousands, for in such cases a small party of immigrants, knowing neither the language nor the customs of the land is doomed to speedy absorption or even to ruthless destruction<sup>(2)</sup>.

A typical though familiar instance is the story of the Spanish crew shipwrecked off Yucatan, under Valdivia, in 1511. Their ship had been sent to Haiti by the people

(1) To what extent are we then justified in examining if shields for instance are in America of Asiatic (i.e. Mongolic) importation as asserted by Foy ("Führer durch das Rautenstrauch-Joest-Museum, Köln, 1906, pp. 124-125).

(2) Cf. Friedrich von Hellwald, "Comptes-rendus of the First International Congress of Americanists," Nancy, 1875, vol. i., pp. 143-144.

of Veragua, risen against Nicuesa, and they had touched a coral-reef in the west of Jamaica. These Spaniards were made prisoners by a Maya chieftain, who began by sacrificing most of them, including Valdivia himself. A few contrived to escape and become slaves of other caciques of a more gentle nature. Finally only *two* survived, a priest named Geronimo de Aguilar and a sailor Gonzalo Guerrero. The latter conciliated the favours of the Indians, was accepted as the member of a tribe, married an Indian girl and become in short so much of an Indian himself that, when Cortes landed in Yucatan, in 1519, this Gonzalo could hardly speak Spanish and hesitated to follow Cortes on his expedition as he felt quite happy with his dusky countrymen. Aguilar, on the contrary, followed Cortes and proved of great use to him as an interpreter (1).

{1} Cf. Bernal Diaz de Castillo, "Historia verdadera de la Conquista de la Nueva España," chap. xxvii.-xxix.

VI.  
LINGUISTIC.

I.  
GENERALITIES.

In American linguistics we are on the whole as much in the dark when we try to generalize, as in the anthropological field. In the latter we were continually finding the words *mongolic* and *mongoloid*. Since Humboldt's great researches on the philosophy of language (1), the word *incorporative* has been applied to every possible American idiom (2). And yet we must realize that only

(1) Cf. W. von Humboldt, "Ueber die Verschiedenheit des menschlichen Sprachbaues," published by A. F. Pott (Berlin, 1880), vol. ii., p. 176 seqq.; W. von Humboldt, "Ueber das Verbum in den amerikanischen Sprachen." The latter paper is unfortunately omitted in all the editions of Humboldt's works, but there is an English translation by Brinton: "The philosophic grammar of American languages" (Philadelphia, 1885, in-8, cf. pp. 22-27, § 12-14); W. von Humboldt, "Ueber das Entstehen der grammatischen Formen und deren Einfluss auf die Ideenentwicklung," in his "Gesammelte werke herausgegeben von A. von Humboldt," vol. iii. (Berlin, 1843), p. 274 seqq.; Steinthal, "Charakteristik der hauptsächlichsten Typen des Sprachbaues" (Berlin, 1864).

(2) Brinton (Essays of an Americanist, Philadelphia, 1890, p. 321) had already protested against the misuse of the term "Polysynthesis" as applied to the Maya, Tupi, Otomi and other languages (cf. p. 356, a paper written against Lucien Adam's hasty generalizations; cf. also Brinton, "On polysynthesis and incorporation," in the "Proceedings of the American Philosophical Society," Philadelphia, 1885). In his polemical pamphlet, "Characteristics of American languages" ("The American Antiquarian," 1891), Brinton

a small portion of the American languages are known to us; that only a very small portion of *these* have been studied closely enough to allow a definite appreciation of their general structure. In spite of these *lacunæ* the languages are still so numerous that no single man can hope to master them and bear judgement on their general characteristics <sup>1</sup>.

A certain number of well defined groups have already been ascertained, such as in North America the Athapascan, Algonquin and Sonora families.

The extraordinary variety of all the Central American idioms, including California and parts of the North-West coast, is an amazing and highly mysterious phenomenon.

In Mexico and Guatemala there is only one group which lends itself to a fairly easy classification: the Maya family of idioms, which Stoll's valuable memoirs <sup>(2)</sup> have definitely established and in which he has ascertained phonetic rules and even permutations. The other languages when checked out in colours on the map make

took up a very common point of view as to incorporation as a characteristic of American language. But this had already been contested by Aubin, "Essai sur la langue mexicaine et la philologie américaine," in the "Archives de la Société américaine de France," 2nd series, vol. i. (1875), pp. 338-373, where he went so far as to speak of a "prétendue polysynthèse américaine." Cf. Lucien Adam, "L'incorporation dans quelques langues américaines," in "Revue de linguistique," vol. xix., p. 253 seqq., 348 seqq., who cleverly observes that "l'incorporation n'est point une caractéristique des langues américaines" (p. 260), and further that "le polysynthésisme ne constitue point un quatrième état morphologique" (p. 360). On the somewhat imaginary incorporation to be found in Ixil, a Maya language, cf. Stoll, "Die Sprache der Ixil-Indianer" (1887), p. 86 seqq.

<sup>1</sup>) Nothing is more useless than a general appreciation on American and Greenlandish idioms which only says, for instance, that they have "plenty of feeling with little pleasantness" (Fr. Nik. Finckl. Cf. "Die Klassifikation der Sprachen" Marburg, 1901. in-8), p. 15 seqq.

<sup>2</sup>) Otto Stoll, "Zur Ethnographie der Republik Guatemala" Zurich, 1884, in-8; the same "Die Mayasprache der Pokomgruppe" Vienna, 1888, in-8; the same, "Die Sprache der Ixilindianer" Leipzig, 1887, in-8.

a curious patchwork with very few compact groups and quite an archipelago of tiny linguistic islets <sup>(1)</sup>.

The Mexican language proper or Nahuatl has some affinity to the Sonora group. As early as the seventeenth century, Padre Perez de Ribas <sup>(2)</sup> had connected Aztec with the idioms of Sinaloa (Cahita, Cora). These affinities minutely studied in the last century by Ed. Buschmann <sup>(3)</sup> had lead Brinton to establish an *Uto-Aztec* group, with three great branches: Shoshone, Sonora and Aztec <sup>(4)</sup>; but we cannot be too prudent. The unquestionable analogies with Tarahumaric, Opata, Cahita, etc., are to be observed not only in the numerals (especially from *one* to *five*), in the root consonants of the personal and possessive pronouns, but also in a number of other words. In the Comanche languages the resemblance

(1) The best linguistic map of Mexico is still the one given by Orozco y Berra in his "Geografía de las lenguas y carta etnográfica de Mexico" (Mexico, 1864), corrected by Malte-Brun, "Comptes-rendus of the Second International Congress of Americanists" (Luxemburg, 1878), vol. ii., pp. 10-14 and map. Other similar charts are given by Federico Larrainzar, "Estudio sobre la historia de America," vol. ii. (Mexico, 1875); E. Boban, "Cuadro arqueologico y etnografico de la Republica Mexicana" (New York, 1885, a single folio sheet); Nic. Léon, "Añales del Museo Nacional de Mexico," vol. vii., pp. 279-307, and 2ª epoca, vol. ii., pp. 180-191, and in the "Mem. Soc. Cient. Ant. Alzate," vol. xv. (1901), pp. 275-284; Ant. Peñafiel, "Acts of the Eleventh International Congress of Americanists" (Mexico, 1897); Otis T. Mason, "Mexico, a geographical sketch" (Washington, 1900), pp. 24-31.

A general view of the grammars of most of the languages is given by Franc. Pimentel, "Cuadro descriptivo y comparativo de las lenguas indigenas de Mexico," 2nd edition (Mexico, 1874-1875, 3 vols.; cf. also Fr. Müller, "Grundriss der Sprachwissenschaft," vol. ii.

(2) P. Andres Perez de Rivas, "Historia de los triumphos de Nuestra Santa Fee entre gentes, las más bárbaras y fieras del Nuevo Orbe" (Madrid, 1654); cf. Alegre, "Historia de la Comp.," i., p. 239 seqq.

(3) Buschmann, "Spuren der aztekischen Sprache im nördlichen Mexiko und höheren Amerikanischen Norden" (Berlin, 1859, in-1) and "Grammatik der sonorischen Sprachen" (Berlin, 1864 and 1867, in-4).

(4) Brinton, "The American race," p. 118.

fades away and subsists only in some of the consonants of the personal pronouns.

It would be however misleading to include with Brinton <sup>1)</sup> in the Mexican-Sonora group a number of Californian dialects more closely connected with the Shoshone family. But let us repeat it, we cannot be too prudent with such comparisons; Adolf Uhde <sup>(2)</sup> for instance, publishing a short vocabulary of the nearly extinct Texan Carizos, asserts their absolute independence from the Aztec idioms. And yet it is difficult not to connect *guiye* (= three), *naiye* (= four), *maguele* (= five), *secuase* (= six), with the Mexican *yei*, *nauí*, *macuilli* and *chicuacen*.

It must not be forgotten that in the first years after the Conquista, Mexican became the official language of New Spain and that Mexicans (Tlaxcaltecs) accompanied Cortes on his expeditions throughout the country and often settled down in regions where other languages were spoken. We cannot lay much weight on the geographical distribution of Mexican place-names, as they may, in many cases, be only translations of early Tarasc, Mixteco-Zapotec or Maya names <sup>3)</sup>. Evidence as to the Mexican language being used beyond the Mexican valley is only of linguistic value when supported by precolumbian documents.

Mexican has little if any connection with the important surrounding languages. The Maya tongues show here and there a few borrowed words of questionable antiquity. The difference between Mexican, Tarasc, Otomi, Zapotec and Maya is so fundamental not only in voc-

<sup>1)</sup> Brinton, *op. cit.*, p. 118 seqq.

<sup>2)</sup> Ad. Uhde, "Die Länder am unteren Rio Bravo del Norte" Heidelberg, 1861, in-8, p. 186.

<sup>3)</sup> K. Sapper's instructive paper on Indian place-names in the Northern part of Central America, published in "Globus," vol 66, pp. 90-96, with a map.



abulary and grammar, but also in phonetics that it is impossible to dream of a common origin. Equally different are in Mexican and Maya the morphology and syntax of verbs, the numerals and the development of reverential pronouns. A curious particularity of the Maya idioms (though also found in Tarasc) is the group of *letras heridas* pronounced with the palate by opening or closing sharply the mouth. In Tarasc the *infixes* are of great importance.

In the Maya tongues there is nothing like *incorporation*; we find, on the contrary, the following tendencies in Mexican, the typical example of a polysynthetic language: the idea is to join on to the verb all subjects and objects, so as to closely unite morphology and syntax. To that effect the accusative object of a transitive verb is inserted between the personal pronoun and the verbal root or, if it is as an attribute placed *after* the verb, it must be beforehand indicated in the aforementioned place. When it is incorporated before the verb it loses its nominal desinence (*tl*, *tli* or *in*), a strict application of polysynthetic principles. For instance to say: "I love the flowers," you have the choice between *ni-c-tlaçotla in xochitl* (I it love: the flowers), or *ni-xochi-tlaçotla* (I flowers love).

But as a matter of fact, nothing is rare in genuine old texts than this incorporation of the noun between the pronoun and the verb. And even then, the meaning is altered; in the first case the exact sense is: "I love *the* flowers" (*i.e.* determined flowers), whereas the incorporated sentence means: "I love flowers," *i.e.* "I am a flower lover." Wilhelm von Humboldt's often quoted example *ni c-qua in nacatl* signifies "I eat the flesh" and *ni-nica-qua*: "I eat flesh," *i.e.* "I am a flesh eater," or else "I eat flesh" and not some other kind of food," *e.g.* bread. In Latin we would put it: *carnem voro*

*carnivorus sum*. In the first case the object is separable, in the second it is not. You may say in Mexican *ni-tle-namaca*, "I sell fire," "I make smoke," but not in the same sense *ni-c-namaca in tlètl*. *Tlènamaca* is a complete expression by itself and from it can be derived *tlè-namacac* "incense-priest," in the same manner as *naca-macac* "slaughterer," *i.e.* "flesh-seller." But, in the other form, can we really consider as an "incorporation" the insertion of a pronom in the oblique case to indicate the object which will be named later on, after the verb? (1) I believe that in this case the true spirit of the Mexican and other North American languages is an utterly different one. The explanation must be sought for deep into the psychology of linguistic evolution, and as it is a question of primary importance, I may be allowed a closer examination of the subject.

Examined in the abstract one language is as good as another, and no language seems entitled to precedence; but we meet with more or less simplicity in the methods used to distinguish grammatical forms and syntactic relations. As a rule, the simpler the grammar, the more intricate the syntax and vice-versa. Languages, on the whole, progress from the concrete towards the abstract. The abstract idea "animal" is later than the concrete denominations "tiger," "wolf" or "cat." The words for red, green and blue are earlier than the notion of colour. The Malay word for colour, *varna*, is borrowed from the Sanskrit and is originally a very concrete term meaning "covering," *i.e.* "surface," as if colour was the covering of substance.

The study of this evolution justifies us in considering

(1) J. N. B. Hewitt (in the "American Anthropologist," 1893) had already attacked the incorporation theory, but with arguments so feeble that Brinton (the "American Antiquarian," 1894) was fully justified in neglecting them.

concrete terms as primitive, a stage of development to which certainly belong a number of American languages. The uncultured savage specializes, his more civilized brother generalizes <sup>(1)</sup>, a fact illustrated in American linguistics both by the verb and the noun.

Mexican, as many other American idioms, cannot express the idea: "to eat," but is compelled to say: "I eat something," "I eat bread," etc. "To eat something," "to eat bread," are in our mind but secondary conceptions compared to the important abstract notion "to eat"; and yet the latter can only be rendered by an awkward verbal noun, a kind of instrumental future: *qua-li-γ-tli*.

To the same class of specialisation <sup>(2)</sup> may be referred the various verbs used for the idea of *lying*, according to the length or breadth of the object: *teca, mana, tlalia* <sup>(3)</sup>.

Likewise nouns containing an idea of belonging, such as those expressing family relationship or parts of the body, are difficult to separate from a personal concept of some kind. This gives a plausible explanation of the Caraib "woman-language" and also of the frequent linguistic differentiation of a man and a woman's relatives (*i.e.* the *uncle* of a man is not designed by the same word as the *uncle* of a woman). The latter particularity may also be caused by the social condition of women and may have been sharpened still more by matriarchal institutions <sup>(4)</sup>.

(1) Georg Curtius, "Grundzüge der griechischen Etymologie," vol. i. (Leipzig, 1858, p. 80), had already acutely observed that "die Differenzen der Synonyma sind älter und ursprünglicher als die Differenzen Begriffssphären."

(2) Cf. Fr. Müller, "Grundriss der Sprachwissenschaft," vol. i. (1877), pp. 129-131.

(3) The observation of this fact has led me to the idea that the so-called irregular verbs of Indo-European languages are perhaps the remains of a primitive specialization; the various tenses of a verb were looked upon as different words not yet sufficiently connected by an abstract conception in the background, and had therefore to be expressed by different roots.

(4) In Mexican, Maya, etc., a man and a woman's relatives are

In many American tongues there is a fundamental law that you cannot say "father," but only "my father," "our father," "somebody's father"; not "ear," but only "my ear," "our ear," "somebody's ear" (1). So that when it comes to comparing nouns from different languages, one must always be careful to eliminate possible possessive pronouns (2).

The union of such nouns and their pronouns has become such a close one, that in Mexican from *achcauhtli* "the elder," are derived *te-achcauh* and *tiachcauh* "somebody's elder brother," and *γ-ti-γacauh-γo* "his chieftaincy" Sahagun; and from *te-iccauh* "somebody's younger brother," are formed *no-te-iccahuan* "my younger brother's" (3), instead of *n-iccauan* and *γ-te-iccauh* "his brother," instead of *γiccauh* (Chimalpain vii, edid. R. Siméon, p. 127-128 and 150-151). Another proof that the adjunction of the possessive pronoun turns the noun

still carefully differentiated. Molina's dictionary contains a number of words used by women only; on the Caraïb "woman-language," cf. Sapper, "International Archiv für Ethnographie," vol. x. (1897), p. 57.

(1) The same may be said of Waicuri in California (cf. Jacob Baegert, "Nachrichten von der amerikanischen Halbinsel Kalifornien," Mannheim, 1772, p. 181 seqq.) of the Caraïb idiom and of a number of South American languages. Dr. Koch Grunberg kindly informs me that in Umáua-Hianákoto, the words for half-full and full can only be used before a noun and joined on to it: *enaiyake eline*, "half (a pot)," *eline nanehe*, "a full (pot)." The word "to hear" must be used with "a voice"; the words "to wash" and "to sow," with "cotton clothing" and "a mask."

On inseparable possessive expressions, cf. Pott, "Internationale Zeitschrift für allgemeine Sprachwissenschaft," vol. iv. (1889), p. 96; E. Kovár, "Über die Bedeutung des possessiven Pronomen für die Ausdrucksweise des substantiven Attributes," in "Zeitschrift für Völkerpsychologie und Sprachwissenschaft," vol. xvi. (1886), pp. 386-394.

(2) Cf. the valuable notes in Pott's edition of W. von Humboldt, "Über die Verschiedenheit des menschlichen Sprachbaues," vol. i. (1880), p. 127 seqq.; W. von Humboldt, "Gesammelte Werke," vol. vi., pp. 181-182.

(3) The expression *te-iccauh* is as inseparable as the French *monsieur* or the Spanish *hidalgo* (*hijo de alguno*).

into a new kind of word is given by the fact that it drops its old suffix article and takes a new suffix both for singular and for plural.

We have thus: *teo-tl* "God"; *no-teo-uh* "my God"; *no-teo-huan* "my Gods." Likewise Maya considers the usual noun as an abstract form and introduces in other ways the idea of relation, for instance in the case of the *genitive*, a conception so closely connected with the idea of possession. *E.g.*, to express in Maya the words "in the village of Maxtunil" or "in the village *called* Maxtunil," you must say: *t-u cabab-il Maxtunil*, literally: "in his village Maxtunil." On the other hand, the Mexican language also uses abstract nominal forms in possessive sentences: *e.g.*: *i-omi-yo* "his bone," from *omi-yo-tl*, the abstract form of *omitl* "bone"; also *i-tlamamatla-yo-c teocalli* "on the step of the temple-pyramid."

No connection can be established between the languages of Mexico and those spoken in the West-Indies or South-America (1), not to mention the Old World. In the Central American isthmus are used as far *ás* North as

(1) There has been more than one attempt to find analogies to the Maya languages in the various idioms of the West Indies, but they have always turned out on closer examination to be unsuccessful. Cf. for instance Léon Douay, "Affinités lexicologiques du haïtien et du maya," in the "Comptes-rendus of the Tenth International Congress of Americanists" (Stockholm, 1897), pp. 191-206. The alleged resemblances are by no means convincing, and in most cases are mere accidental analogies. The word *caco* is already a foreign word in Maya, being derived from the Mexican *cacauatl*. The commercial relations which probably took place between Yucatan and Cuba may well have introduced a few Maya words into the island idioms. Reports of the time of the Conquista make these early relations quite probable; but there is no proof the languages of Cuba and Yucatan had the slightest analogy. The trade was doubtless carried on with the help of interpreters.

The Caraïb elements in Costa Rica and on the Mosquito coast are of South American origin. The *Karif*-speaking Caraïbs of the Honduras coast came in the eighteenth century from the island of St. Vincent (cf. Sapper, "International Archiv für Ethnographie," vol. x., p. 53.

Costa-Rica, a number of tongues belonging to the Chibcha group <sup>1</sup>, but these are surely of South-American origin and their frontiers curiously enough corroborate those assigned by zoological and botanical geography to the Hylaea of Rio San Juan.

In the Northwestern regions of America may be observed a number of linguistic, ethnological, mythological and archaeological connections between the inhabitants of Alaska and such primitive Asiatic tribes as the Tchouktch, Koryaks, Kamtchatdâles, Youkagirs and Gilyaks. These have been established by Franz Boas in the course of the Jesup expedition <sup>2</sup>).

To these general considerations may now be added a summary view of the Mexican languages.

## 2.

### A VIEW OF THE MEXICAN LANGUAGES.

It seems advisable to keep to the geographical distribution of languages as it existed in the days of the *Conquista*, putting aside for subsequent research all earlier and later modifications and taking the date of the Spanish invasion as a definite landmark. It seems also necessary to keep apart languages used by compact tribes or groups of tribes from minor linguistic islets, which may either

<sup>1</sup> The Guaymi of Veragua, the Talamanca Indians of Costa Rica, belong, linguistically speaking, to the Chibcha group, and are connected with the Aroac. Cf. Fr. Müller, "Grundriss der Sprachwissenschaft," vol. iv., p. 189; Max Uhle, "Comptes-rendus of the Seventh International Congress of Americanists," Berlin, 1888, p. 466.

<sup>2</sup> Franz Boas, "The Jesup North Pacific Expedition," in the "Comptes-rendus of the Thirteenth International Congress of Americanists," New York, 1902, pp. 91-100; Wald. Bogaras, *ibid.* xiv., Stuttgart, 1904, vol. 1., pp. 129-135; Wald. Jochelson, *ibid.* pp. 119-127; Leo Sternberg, "Bemerkungen über Beziehungen Zwischen der Morphologie der giljakischen und amerikanischen Sprachen," *ibid.* pp. 137-140.

be remains of important dialects or evidence of casual immigration from other countries. Finally we are justified, I believe, in connecting tongues linguistically independent, but showing the same degree of civilisation. Mere ideas, barring mythological parallels are easily transmitted by intellectual intercourse, familiar examples being the names of the twenty days and of the various annual feasts. Thus, with hardly an exception, the whole group of languages from Michoacan to Nicaragua forms a connected civilised chain in direct opposition with the barbaric idioms of the Northern and Southern regions. Languages of the Mexican group show signs of a lower degree of civilisation, especially as regards their connections with the Sonora languages, but this *does not* apply to the calendar. This makes it difficult to decide whether the Cora and Huichol Indians of the Sierra de Nayarit <sup>(1)</sup> have a primitive linguistic relationship to the Mexicans or whether their idioms are only the consequence of a civilizing wave originated in the South, in a comparatively recent period.

1.—In the North-western parts of Mexico we find the compact group of the Sonora languages: Cora and Huichol, Tepehuana, Tarahumara, Cahita, Opatá, Eudeve and, derived from the two last named tongues, Pima <sup>(2)</sup>.

(1) Karl Lumbholtz, "The Huichol Indians of Mexico," "Bulletin of the American Museum of Natural History," New York, vol. x. (1898); the same, "Symbolism of the Huichol Indians," "Memoirs of the American Museum of Natural History," vol. iii., anthr. ii. (1900); the same, "Unknown Mexico" (London, 1903, 2 vols., in-8); Seler, "Die Huichol-Indianer des Staates Xalisco in México," in "Mitteilungen der anthropologischen Gesellschaft zu Wien," vol. xxxi. (1902), pp. 138-163.

(2) P. Jose Ortega, "Doctrina cristiana, oraciones, confesionario, y vocabulario de la lengua Cora" (1729); Carlos Landero, "Estudio sobre la lengua Huichola," in the "Republica Literaria," of Guadalajara; P. Benito Rinaldini, "Arte para aprender la Lengua Tepehuana" (Mexico, 1745); Fr. Miguel Tellechea, "Compendio gramatical para la inteligencia del idioma Taraumara" (Mexico, 1826); "Arte de la lengua Cahita segun las reglas de muchos

The relationship to this group of the Hopi (Moqui) and Shoshones is highly doubtful; but we may perhaps be justified in mentioning here the Comanches of Texas. On the contrary the Apaches (1), whose territory lies to the South and to the West of the latter, are the last members towards the South of the great Athapascan group to which belong also the Navajos.

We are less fully informed about the languages spoken by the Indians of North-Eastern Mexico; in spite of their variety and on account of their wild manner of living, they are all put down under the one heading of Chichimecs. Further researches in this ground are greatly to be desired, as this rough designation lacks in precision and historical accuracy: the Chichimecs are the nomad tribes of the North of Mexico; but as all Mexican tribes were at one time nomad, they might all be called Chichimecs and the "Chichimec period" means nothing else but the "prehistoric epoch." And further, as nearly every Mexican tribe boasted of a more or less high antiquity, the words *Chichimecatl* and *Chichimecatecutli* "Lord of the Chichimecs" was often used (2) as an honorific appellation, for instance in Tetzaco, Acolhuacan and Tlaxcallan. At any rate the Chichimecs were frequently thus named to distinguish them from the various Maya tribes of the East, the Olmeca-Uixtotin and the Nonoualca (3).

2.—An isolated group is formed by the early inhabitants of the land invaded by the Mexicans proper; they were driven by the latter into the neighbouring mountains,

peritos" (Mexico, 1737); "Arta de la lengua Névome" (*Pima*), published by B. Smith (New York, 1862), in vol. v. of the "Library of American linguistics." (On the Eudeve language cf. *ibid.* vol. iii.) Buschmann, "Grammatik der vier sonorischen Hauptsprachen" (Berlin, 184-1869, 3 parts).

(1) Ed. Buschmann, "Das Apache als eine athapaskische Sprache erwiesen" (Berlin, 1860-1863, 3 vols.).

(2) Bernal Diaz, "Historia verdadera," cap. 64.

(3) Sahagun, x., cap. 29, § 10 and 12.



where they are still to be found. Among these tribes may be named the Tepehua of the Eastern Sierra and, from North to South, the Pame, Otomi (Hiâhiù), Maçahua and Matlatzinca (Pirinda) (1). Several early authors looked upon the Otomi as the original inhabitants of the land (2) and we are often told by them that the great Toltec city, Tollan, was founded on the site of an old Otomi town named Mamemhi.

3.—In historical times this region was invaded by a number of tribes, speaking Mexican languages; according to the legends and in true American manner they came from caves and especially from Chicomoztoc, the "Place of seven caves." According to Sahagun's chronological enumeration (3) they came after the "wise" (*i.e.* the mythological Toltecs), after the Olmeca-Uixtotin, who lived on the Atlantic coast in the province of Vera-Cruz, and after the Cuexteca and Otomi.

They consisted of the historical Toltecs, who lived in Tollantzinco, Chicotitlan and Tollan; the Teochichimecs (Cora, Huichol?), Tarascs and Nahua. The last named were divided into the following tribes: Tepaneca, Acolhuaque, Chalca, Uexotzinca, Tlaxcalteca, Cholulteca and Mexica (Mexitin). We cannot comment here upon the contradiction between each local mythology and immigration legend or we would get lost in aimless details; let us keep to the clear historical fact that the Mexicans and Aztecs belong to a distinct linguistic group (4), and

(1) D. Franc. Haedo, "Gramatica de la lengua Otomi" (Mexico, 1731); D. Juan Cr. Najera, "Disertacion sobre la lengua Othomi" (Mexico, 1845); Diego de Nagera Yanguas, "Doctrina y enseñanza en la lengua Maçahua" (Mexico, 1637); Fr. Diego Basalenque, "Arte de la lengua Matlatzinca" (Mexico, 1640).

(2) Herrera, iii., 141, 2.

(3) Sahagun, x., cap. 29, § 12.

(4) Among the numerous Mexican grammars and dictionaries may be mentioned: A. de Olmos, published by R. Siméon (Paris, 1875, in-8); Carochi, "Arte de la lengua mexicana" (Mexico, 1645); Molina, "Vocabulario de la lengua Mexicana" (Mexico, 1571), and

that their military spirit and commercial capacities enabled them to rapidly develop their insignificant territory into a mighty empire stretching along the Pacific and Atlantic coasts and which found its highest expression in the days of the united kingdoms of Mexico, Tetzcoco and Tlacopan.

Towards the North-East, the Mexicans spread their power over the territory of the Huastecs and Totonacs. The former are the oldest known members of the Maya family (1), but distinguished from the other Mayas by the absence of any hieroglyphic script; the latter, about whom few researches have yet been made, have a peculiar language (2) and a civilisation of their own (3) round the cities of Cempoallan and Misantla. They were the first tribes met with by Cortes and his followers, and it seems probable that to their country may be originally ascribed two fine picture manuscripts, the *Codex Nuttall-Zouche* and the *Codex Vindobonensis*. The Totonacs may well be numbered among the earlier inhabitants of the land.

Towards the North-West, the Mexican extended their domination along the Californian gulf about as far as the present Culiacan, a name which has but a fanciful analogy with Colhuacan. Towards the South they covered the greater part of the Tehuantepec isthmus. On the Tabasco coast lived the Ahualulcos, in the South,

in Platzmann's new edition (Leipzig, 1880); a Mexican grammar by W. von Humboldt has remained unpublished. New and methodic studies of the various Mexican dialects would be exceedingly welcome. Fr. Starr, "Notes upon the ethnography of Southern Mexico" (Proceedings Dav. Academy Sc., vol. ix, 1902, p. 74-82) has drawn up a vocabulary of the Aztec dialect still spoken at Citlaltepec (Vera Cruz).

(1) O. Stoll, "Zur Ethnographie der Republik Guatemala" (Zurich, 1884).

(2) D. José Zambrano Bonilla, "Arte de la lengua de Naolingó" (México, 1752); Pimentel, "Collected essays" (Mexico, 1903), vol. ii, p. 308-357.

(3) H. Strebel, "Abhandlungen des naturwissenschaftlichen Vereins," vol. vii (Hamburg, 1884).

on the Pacific, in Chiapas, Guatemala and Salvador, we find the Pipiles and Izalcos <sup>(1)</sup>. The analogies and marked differences of the Aztec and Pipil languages are hardly to be explained by the fairly short Mexican campaigns in this region under king Ahuitzotl (1484-1502). Stoll supposed therefore that the Pipiles of Northern Guatemala might be the survivors of early Toltec immigrants <sup>(2)</sup>. According to an early legend they came from Cholula <sup>(3)</sup>, a city occupied by the Toltecs, and Palacio (1576) informs us that they worshipped Quetzalcoatl, the great god of Cholula <sup>(4)</sup>.

Other Mexican dialects are: Alagüilac, formerly spoken in Guatemala, but now extinct; in Nicaragua, the language of the Nicaraos or Niquirans; perhaps in Costa Rica, the language of the Güetares, and in Panama, round the Chiriqui laguna, the tongue spoken by the extinct Siguas or Seguas. According to Sapper the very poor vitality of these Central-American Nahuatl dialects is a fair proof of their comparatively recent introduction <sup>(5)</sup>.

4.—In the Western part of the Mexican valley a linguistically quite independent nation, the Tarascs (Michhuaque) has succeeded in holding its own in Michuacan, against all the Mexican power <sup>(6)</sup>. They had a highly developed civilisation, especially as regards feather-mosaics. Their migration legends show curious parallels with Mexican traditions. The Tarascs now to

(1) The name "Pipil" is the plural of the Mexican "pilli," son.

(2) Stoll, "Zur Ethnographie der Republik Guatemala," pp. 11 and 25.

(3) Seler in "El Centenario" (Mexico, 1892), pp. 250-251.

(4) Palacio, "Carta dirigido al Rei de España, Anno 1576," published by E. G. Squier (New York, 1860).

(5) Sapper, "Archiv für Anthropologie," new series, vol. iii, p. 6.

(6) Diego Basalenque, "Arte de la lengua Tarasca," published by Nic. de Quixas (Mexico, 1711); cf. also the great dictionaries of Juan Baptista Lagunas and Maturino Gilberti.

be found on the Vera-Cruz coast (Chalchiuheueyécán) seem to have branched off from the former. For further details I may refer to Seler's excellent monographs (1). Between the Mexican and Otomi tribes, the Tarascs form by themselves an important and isolated linguistic group.

5.—In the South of the Mexican valley, round the town of Morelos, we find the Mexican-speaking Tlalhuica with whom are connected the Ocuilteca, Chalca and Xochimilca. To these may be added the Coahuixca who still use a Mexican dialect, though their name be of Tzapotec origin, and though we find immediately after them the Mixtec and Tzapotec tribes. The latter have their centre in the Oaxaca province, round the towns of Oaxaca and Zaachilla. The Mixtecs (2) occupy chiefly the West of the province, the Tzapotecs (3) the South-East. Between the above named Coahuixca and the Tzapotecs, live the Yopi or Tlapaneca, who are closely connected with the last-named.

The complicated ethnography of the Oaxaca province is made all the more puzzling by the unpleasant Mexican custom of putting down indifferently all strange-speaking barbarians under such names as Tenime, Popoloca, Pinome, Chinquime or Chochontin, the last three names being actual frontier tribes belonging to the Mixtec groups (4).

The name Popoloca is also born by savages dwelling

(1) Seler, "Gesammelte Abhandlungen," vol. iii., pp. 33-156.

(2) Ant. de los Reyes, "Arte de la lengua Mixteca" (Mexico, 1593); cf. the new edition by Charencey (Alençon, 1889).

(3) Juan de Cordova, "Arte del idioma zapoteco" (Mexico, 1578); new edition by Nic. León (Morelia, 1886, in-4).

(4) As Sahagun puts it: "Pinome, Chinquime, Chochontin ... iniquy in centoca Tenime ipampa in Popoloca ic motocayotia Tenime," "the Pinome, Chinquime and Chochontin are all called *Tenime*, because they speak a barbarous language; that is why they are called *foreigners*. Sahagun adds that they are as rudely civilized as the Otomi and that they lived in a "poor land" ("itolinica"), which is still the case in the present day.

on the frontiers of Tabasco and Guatemala: but the Popolocas of the Mixtec-Tzapotec group, or Chuchones, dwelt on the upper edge of the Rio Papaloapan cañon or cañada, on the old commercial route from the Tzapotec regions to the South-East of the Mexican plateau. From there, they spread in various directions to Tehuacan, Tecamachalco, Quecholac and Coaixtlahuacan. According to old reports Popoloca-Pinome had penetrated further still in the Mexican territory and had even their own Barrio in Tlaxcallan.

To the Mixtec-Tzapotec group belong further the Cuicatecs, also on the upper edge of the cañada and to their North the Chinantecs; at Teotitlan del Camino the Mazatec territory borders on the Popoloca region.

Along the Pacific coast, from West to East, we find several quite isolated groups: the Amuchos, Chatinos, Triquis and Huaves. Close to Tehuantepec, in the midst of the Tzapotecs, is dispersed the peculiar language of Tequisistlan, and on the shores of the Pacific, live part of the Chontal whose idiom is one of the Maya dialects.

Another linguistic group, established by Berendt's researches<sup>(1)</sup>, consists of the Mixe-Zoque tongues, spoken by mountain tribes on the frontier between Tabasco and Chiapas, the Mixe living more towards the West, the Zoque more towards the East and in considerable portions of the province of Chiapas.

The Chapanecs or Chiapanecs<sup>(2)</sup>, who occupy in Chiapas part of the Pacific coast, are linguistically connected with the Mangues or Chorotega of lake Managua

(1) Berendt, "Zeitschrift für Ethn.," vol. v (1873) "Verh.," pp. 146-153; P. Quintana, "Gramática de la lengua Mije" (1730) published by Belmar (Oaxaca, 1891); José M. Sánchez, "Gramática de la lengua Zoque" (Mexico, 1877).

(2) Brinton, "The American race" p. 145-146; C. N. Berendt, "Remarks on the centres of ancient civilization in Central America" (New York, 1876), p. 13.

in Nicaragua. But it is difficult to decide whether they originally came from there or from the North.

The languages of Guatemala, which have been so ably classified by Stoll, no longer belong to our scope. They are nearly all branches of the great Maya family, a group which covers also Yucatan, British Honduras, Campeche, Tabasco and Chiapas, and which is fully characterized by an unmistakable unity both in hieroglyphic script and in architectural methods.

A puzzling and important question is to what extent Maya tribes did originally occupy the shores of the Mexican gulf, from the Huastecs of Tampico down to Tabasco. To the South of the Huastecs, the Totonacs, to whom Torquemada ascribes the great monuments of Teotihuacan, show great architectural analogies with the Huastecs, especially in the plans of their respective cities, in spite of the recent Mexican influences, illustrated by Strebel's excavations (1).

Another remarkable fact is the presence in Chiapas of the Chicomucelotecs, who are so closely connected linguistically with the Huastecs, that Sapper surmised them to be nothing else than Huastec immigrants (2).

A further element in the problem, is the close connection with the Maya family exhibited by the Olmeca-Uixtotin, the inhabitants of the province of Cuertlaxtlan, a connection emphasized by the tradition opposition of the Chichimecs and Nonoualca, *i.e.* the Mexicans and Mayas (3).

(1) Seler, "Gesammelte Abhandlungen," ii, pp. 122 and 126.

(2) Sapper, "Archiv für Anthropologie," new series, vol. iii 1905, p. 5.

(3) Sahagun x, cap. 29, § 1 and 10; "Las tierras de Onohualco son vecinos de el mar, y son las que aora llamamos Yucatan Tabasco y Campech" Torquemada 3, 7, i, p. 256; "Nonoualco tlahtolli ymocuehcuepyan," "Nonoualco, the country where the language changes" (Chimalpain, "Relac." vii, 28, 29, 37; "Doña Marina sabia la lengua de Guaçacualco que es la propria mejicana,

Sahagun tells us that, according to tradition, the Olmeca-Uixtotin were Toltecs who had remained behind, had come under Mexican influence and had learnt the Mexican language; that their country was fertile, rich in india-rubber, in precious green stones, in gold and in silver; and that they called themselves "Sons of the far-gone Quetzalcouatl." All this is perhaps but a fanciful development of the ideas of riches and commerce suggested by the name Quetzalcouatl, but the whole Toltec legend may perhaps be founded on some prehistoric fact. Seler conjectures that the Tutulxiu immigrants who founded Mayapan in Yucatan, may have come from the Olmeca-Uixtotin region (1).

The term Mixtec, used by Sahagun in connection with the Olmeca-Uixtotin, must not be misinterpreted. It does not refer to their offspring, the Anauaca-Mixteca of the Pacific coast, but to the inhabitants of Mixtlan a region which to this day is called Mistequilla "the little Mixtlan" or "Cloud land", in opposition with *alta* and *baja* Mixteca.

These Northern Mixteca dwelt with the Olmeca in the South of the Vera-Cruz province, the North of which belonged to the Huastecs. All three tribes had a similar religion and adored chiefly the Earth-Goddess Mexican Teteoinnan, Toçi; the Mexican goddess Tlaçolteotl, worshipped by the Huastecs *i-cuex-uan* "her Huastecs") was imported by them into Mexico (2).

y sabia la de Tabasco, como Jerónimo de Aguilar sabia la de Yucatan y Tabasco que es toda una, entendianse bien" (Bernal Diaz, "Historia verdadera," cap. 37.

(1) Seler, "Globus," vol. 61, pp. 97-99.

(2) "Historia de Colhuacan y de México," part i., pp. 76-78 (my copy): "9 acatl ypan inin acico Tollan yn y'x cuinanme yca tlaltechaçico ynin malhuan omentin yn quincacalque auh yn Tlatlacatecolo yn zihua diablome yn moquichhuan catca yninmalhuan Cuexteca. Oncan yancuican tzintic in tlacacahzli." (In the year 9 reed the "Ixcuinanme" came to Tollan, with their prisoners

According to the etymology of their names, all these tribes originally occupied the tropical shore of the Mexican gulf. The name Uixtotin (the root of which *uix* is connected with *Cuex*), is to be found in the name of the Goddess of salt sea-water Uixtociuatl, and is derived from the verbs *uiuixca* and *uiuixoa* "to shiver," "to move to and fro" (1). The old name of the Vera-Cruz region was *Chalchiuhcueyecan* "the region of the Water-Goddess." The Tabasco coast is no doubt *Tapach-co* "the land of mussels" (*tapachtli*). The name Olmeca, "men of Olman," also points to a tropical climate, where india-rubber "olli" can grow; in the Popul Vuh (p. 20) in which Quetzalcouatl is described as a god of the gulf shores, the Toltec is called *ah k'ol* "the lord of india-rubber."

The exact character of the Olmeca-Xicalanca is even more difficult to ascertain. Their ancestor Xicalancatl is said to have founded not only Xicalanco, in the province of Mexicaltzinco (Vera-Cruz), but also another place of the same name in the province of Tabasco (2). The latter was a great commercial centre and from it, the whole Atlantic coast was known as Anauac-Xicalanco. Early authors identify this region with (Tlillan) Tlapallan, and with Nonoualco or Nontiacco, an identification which merely signifies that in these parts, where Maya dialects reigned, the Mexican-Chichimec languages were no longer understood (3). According to a remarkable statement of Ixtlilxochitl (4), the Toltec hero Quetzalcouatl-Huemac

they married the earth, two (men) they shot with arrows and the demon sorcerers, the female devils, whose husbands were the Huastec prisoners. Then began for the first time the custom of shooting their victims with arrows.)

(1) Seler, "Veröffentlichungen des königlichen Museums für Völkerkunde," vol. i., 4, p. 155.

(2) Gomara, "Cronica de la Nueva España," fol. 210.

(3) Cf. *supra*, p. 78, note 3.

(4) Ixtlilxochitl, "Historia Chichimeca," c. i., pp. 19-20 and seqq.



“preached” to the Olmeca-Xicalanca, but having poor success, he returned to the East from where he had come and disappeared on the coast of Coatzacoaleco (Tabasco); according to other sources he vanished in “the water,” by which is also meant the Eastern sea <sup>(1)</sup>. If we believe Camargo <sup>(2)</sup>, the Olmeca-Xicalanca were the primitive inhabitants of Tlaxcallan and were driven towards the Atlantic coast by the Teochichimec invasion <sup>(3)</sup>. Mendieta further inform us that the Xicalanca spread their power along the coast till beyond Coatzacoaleco <sup>(4)</sup>.

Are we not entitled to conjecture that all these sea-coast tribes, Huastecs, Totonacs, Olmeca-Uixtotin (Mixteca) and Olmeca-Xicalanca belong more or less to a single branch of the great Maya family <sup>(5)</sup>. The influence of the Huastecs on the Totonacs, as illustrated by their ruined cities or rather by the existence in the Totonac country of ruins similar to Huastec ruins, speaks either for an early extension of the Huastecs towards the South or for a close relationship between Huastecs and Totonacs. The two languages seem entirely different, and we must await fresh archaeological evidence to be able to solve the problem.

In latter times the Olmeca-Xicalanca were assimilated by the Mexicans of historical times or else became gradually mixed with tribes like the Pipiles of Ahualulco.

The early inhabitants of Tlaxcallan, stated by Camargo to be the Olmeca-Xicalanca, must at any rate have been a

(1) The technical expression in the Mexican texts is “atlan calqui” (he goes into the water).

(2) Camargo, “Hist. de Tlaxcala,” i., cap. 3, pp. 23-24.

(3) Torquemada, “Mon. Ind.,” 3, 11, i., p. 263. These “Teochichimecas” are perhaps Otomi; cf. Torquemada, *l.c.* 2, 19, 1., p. 261: “Teochichimecas son los que agora se llaman Otomies.”

(4) Mendieta, “Hist. eccles.,” 2, 3, p. 146.

(5) The same views have been long ago expounded by Selet, “Archiv für Ethnographie,” vol. ii., Leyden, :889, pp. 287-288.

foreign tribe, with a language of its own and living directly to the North of the Huastecs and Totonacs.

Another remark in connection with the above may prove of importance: for the Toltecs of Tollan, for the Mexicans, for the Olmeca-Uixtotin, etc., the Tabasco coast (Nonohualco) is *in the East*, or as Mexicans put it "in the sight of the sun" *iixco tonatiuh*; for the Maya tribes on the contrary, Quiche, Cakchiquel, etc., the same region is *in the West*. This simple observation explains a number of contradictory statements. When, for instance, in the Popol Vuh, the Tapcu Oloman <sup>(1)</sup> (who correspond to the Tapcu Oloman of the Cakchiquel annals, and the Mexican Tlapco Olman, *i.e.* the Eastern Olman) are said to remain behind in the East, that is only possible if at that epoch the Maya tribes living beside the *yaqui-vinak* <sup>(2)</sup> (the Toltecs), were in a country further to the West than the region spoken of. The very name Tapcu Oloman must have originated in the times of these migrations. This explains also why the name Tulan (Mexican: Tollan) is so often connected in these legends with the word *Zivan* or *Zuivan*, which evidently means West.

At the beginning of the Titulo de Totonicapan, which contains a version of the Quiche myths, we cannot read with Charencey: "Vinieron juntas de la otra parte del mar, del oriente, de *Pa Tulan, Pa Civan*": we must delete the comma after *mar* and read: "Vinieron juntas de la otra parte del mar del oriente, de *Pa Tulan, Pa*

[1] Popol Vuh (Brasseur's edition), p. 206.

[2] "Yaqui vinak" people who have gone forth (Popol Vuh, p. 212, 246, etc.). "Yaqui" is borrowed from the Mexican "yaquè" (those who have gone forth), that is to say, the Mexicans who have wandered down to the shores of the Gulf, *i.e.* the Toltecs. Cf. on the latter point Seler, "Ursprung der mittelamerikanischen Kulturen" in the "Zeitschrift der geographischen Gesellschaft zu Berlin," 1902, p. 549.

*Civan*" (1). For it is not written in the Annals of the Cakchiquels: *Hun c'a chu kahibal k'ih* [hun Tulan], *chiri c'a xoh pe vi chu kahibal k'ih.*" "In the West is (a Tulan), from there in the West did we come." In the Chilán Balam of Mani the birthplace of the *Tutulxiu* is called Nonoual (*vide supra Nonoualco*), and they are said to have come from the West, from the land of *Zuiva*. And when the Cakchiquel Annals refer to battles in the East with the warfaring *Ahnonoualcat*, we may infer that in those days the Cakchiquels were still to the West of the above-named tribes.

These mentions in the Maya traditions of the Tapcu Oloman and Ahnonoualcat show how close they must have lived to the Maya tribes.

The study of the great mythical hero Quetzalcoatl will give us a further opportunity to examine the same problems.

### 3.

#### CONCLUSIONS.

I feel unfortunately compelled to omit here even a short synopsis of the Mexican grammatical and syntactic peculiarities. But I may confidently say that a "philosophical" study of the above named languages, as Humboldt called it, has not yet been attempted, if we except W. von Humboldt's own somewhat inadequate attempt to apply his methods to the Mexican language.

The grammars written by the old Spanish authors, in

(1) "Titulo de los Señores de Totonicapan," published by Charcncy (Alençon, 1885), p. 12. The "mar del oriente" is for the Toltecs (Tulan) the Tabasco coast. For the Mayas established later on in Guatemala, Tulan is in the West. In the old legends the tribes of this district are always transposed and must be placed in a new order, according to the above interpretation of the points of the compass.

spite of their unquestionable merits, all labor under the prejudicial disadvantage of having stuck too closely to the latin models. They fail to enter into the spirit of any Indian language; they speak of nothing but declensions, conjugations, moods and tenses, which, at any rate as we would reckon it, are things unknown in Central-American idioms.

We are therefore compelled, with the help of these grammars to attempt an objective reconstruction of every single language. A great help to us may be found in the few extant original Indian texts, but only in those which are not missionary translations of Christian texts or sermons. This may illustrate the priceless value of the above mentioned Mexican texts, such as the archaic hymns, the *Historia del Colhuacan y de Mexico*, and also the *Popol Vuh*, the Cakchiquel Annals and the books of Chilán Balam.

We are enabled to study particularly well the development of the Mexican language in the hymns preserved by Sahagun and in the magical formulæ noted down by Ruiz de Alarcon (1629)<sup>1</sup>. What little information we may collect as to dialectal variations<sup>2</sup>, enables us to establish a small number of phonetic laws. A careful study of word formation enlightens us on the inner structure of the language and enables even to venture upon the hitherto neglected land of etymology. All this makes it highly desirable that we should have a special periodical devoted to American linguistics.

Correct interpretation of the texts can only be obtained through a careful study of peculiar expressions, meta-

<sup>1</sup> Ruiz de Alarcon, "Tratado de las supersticiones de los naturales de esta Nueva España" (1629), published in the "Añales del Museo Nacional de Mexico," vol. vi (1892), pp. 127-223.

<sup>2</sup> Cf. the examples given by Stoll, "Zur Ethnographie der Republik Guatemala," p. 16-25 and by Fr. Starr, "Proceedings Dav. Acad. Sc.," vol. ix, pp. 74-82.

phors and dvandva-like formations, a task which through the frequency of synonyms is not so laborious as might be supposed.

But here also our work is still in its beginning, not only do we still lack a handy Mexican grammar and syntax, but also we sadly in want of a comprehensive dictionary in which would be contained all methaphoric expressions. The same may be said of nearly all, if not all the above-named languages.

Up to now, the documents and sources having been difficult to get at, for all but a few specialists, a dark veil has remained spread over Mexican and Central-American civilisations; a number of erroneous views still prevail uncontested and the educated public still has far more confidence in the most wild and fanciful conjectures, than in the well ascertained results already obtained by steady scientific research.

## VII.

### ETHNOLOGY.

#### 1.

##### GENERALITIES.

A correct appreciation of Mexican and Central-American civilisation is not to be separated from the study of the country itself: the influence of the latter on the inhabitants explains the evolution of the former. Both in body and in mind, man is undeniably dependent on the soil and climate, on the fruit of the land, on the fauna and flora.

Owing to the trade winds, the climate is a very regular one, though totally different in the central plateaux and on the shores of both oceans; the difference is especially illustrated by the rains and by the existence of districts with no outlet for the water. As a natural consequence, we find three distinct kinds of fauna and flora, on the tropical coast-land or *tierra caliente*, on the slopes of the *tierra templada* and on the high plateaux or *tierra fria*, these three zones corresponding more or less to certain heights above the sea-level; likewise do we find a marked differentiation between the inhabitants of the three regions.

To these various climates correspond again various

distributions of the seasons, a word which should not imply our "winter" and "summer," but rather alternate periods of drought and rain. The crops which nature permits, depend wholly on these seasons; man in turn depends on the crops for his livelihood. Agriculture depends therefore not only on the crops allowed of by the soil, a very important question as regards Indian corn, but also on the date and length of the rains (?). We find an echo of these causes in all the feasts of agricultural origin. Prayers for rain and harvest thanksgiving feasts are the central pivots round which works every one of the eighteen annual feasts. We cannot therefore expect to find the same feasts on the Atlantic coast, where the equinoctial tradewinds brought a regular supply of rain at a fixed date as in the mountain valleys, sheltered from the rains and where they only received as much water as was not stopped on the way by the mountain ranges. Again, on the shores of the Pacific, we meet with continual droughts, except when the Ocean winds drive rain-clouds towards the high mountain barrier, which runs along the Southern coast.

Sapper has illustrated in various papers (1) the great importance for the flora of the various geological strata and their individual resistance to the action of water.

The influence of the seasons on agriculture and the particular character of the annual feasts led gradually to the conception of a calendar, which by the observation of

(1) On the fall of water in Mexico, cf. Deckert, "Nordamerika" (1904), pp. 317-321; on the climate, *ibid.* p. 63; Henri de Saussure, "Coup d'œil sur l'hydrologie du Mexique" (Geneva, 1862, in-8).

(2) Carl Sapper, "Über die geologische Bedeutung der tropischen Vegetationsformen in Mittelamerika und Südamerika" (Leipzig, 1900, in-8); K. B. Heller, "Mexiko, Andeutungen über Boden, Klima, Kultur und Kulturfähigkeit des Landes" (Vienna, 1864); Deckert, *l.c.*, p. 300 seqq.; Felix and Lenk, "Geologie und Paläontologie der Republik Mexiko," vol. i and ii (Leipzig, 1890), vol. iii (Stuttgart, 1891).

the Sun and Moon and various natural phenomena, such as the migration of ants <sup>1)</sup> developed into the exact measurement first of a lunar year, then of a "vague" year of 360 days, and finally of the proper solar year.

In order to avoid self evident discrepancies between agricultural feasts and the calendar, at an early date, people were compelled to frequent and somewhat erratic intercalations. This explains why the whole calendar and chronological question depends on the annual feasts and especially on their names <sup>2)</sup>.

The peculiar flora of Mexico, remarkable for the abundance of Cactæa and all sorts of Agaves, *i.e.* plants who can survive a long drought, corresponds in a startling manner by its geographical distribution, with the ethnographical topography of the land. The tropical sea-coasts encircle on both sides the temperate zones and the colder plateaux, prolonging the tropical countries of Central America, whereas towards the North, in the Sonora and Chaparal provinces we find gradual transitions.

On the other hand, the tropical flora of Central America seems to be closely connected with the corresponding Columbian flora in South America. The primeval forest range of Rio San Juan in Nicaragua corresponds to the South American Hylæa and marks the Southern limit of Cactæa and Conifers, the frontier between the Mexican and cisequatorial flora <sup>3)</sup>.

(1) On the importance of the swarm-season among the termites on the Cakchiquel calendar and chronology, cf. the interesting remarks of O. Stoll, "Intern. Archiv für Ethn." vol. i, suppl. pp. 60-61.

(2) Seler, "Gesammelte Abhandlungen," i, p. 703-711.

(3) Cf. the excellent memoir of A. Engler, "Entwicklung der Pflanzengeographie in "Wissenschaftl. Beitr. z. Gedächtnis der hundertjährigen Wiederkehr des Antritts von Al. von Humboldt's Reise nach America" (Berlin, 1899), pp. 134 seqq.; Grisebach, "Die Vegetation der Erde," vol. ii, cap. xv and notes pp. 596-600; Deckert, *l.c.* p. 321; H. Polakowsky, "Die Pflanzenwelt von Costa



The connecting link between the flora of Western Nicaragua and of Guanacaste and Nicoya Costa-Rica is the belt of land between the Pacific Ocean and the lake of Nicaragua. Along the same path passed the few Mexican tribes (Seguas), who went as far South as Costa-Rica and Chiriqui. The Northern invaders of Costa-Rica availed themselves of the dry open savannas of the South coast; the dense primeval forests of the Atlantic region were quite impassable, and to this day their thickets are inhabited by savage Indian tribes of a South-American character.

The fauna of Mexico and Central-America may be substantially defined as a combination of Northern holarctic and neoboreal forms, with peculiar neotropic Southern elements (<sup>1</sup>).

The presence of vegetable products such as cotton, pepper, vanilla, cocoa, etc., was at an early date a sharp enticement to commercial intercourse and gave birth to relations which were not without influence on the progress of civilisation and which, by the immigration of colonies, tended to combine different racial types.

Among the most highly valued articles of exchange, besides gold, turquoises, nephrite, shells, etc., must be mentioned the many coloured feathers of tropical birds which were used to adorn the headdresses and cloaks of kings and princes. The quantity of Quetzal-feathers used in Mexico and Yucatan where the Quetzal-bird never existed, points to an early and active intercourse with the only home of the bird, the mountains of Vera Paz in Guatemala (<sup>2</sup>).

Rica" in the seventeenth "Jahresbericht des Vereins für Erdkunde" (Dresden, 1878-1879), pp. 25-124.

(1) W. Kobelt, "Die Verbreitung der Tierwelt" (Leipzig, 1902), cap. xviii; Alfred Russel Wallace, "Die geographische Verbreitung der Tiere," German by A. Meyer (Dresden, 1876), vol. ii, p. 5 seqq.; A. Heilprin, "The geographical and geological distribution of animals" (London, 1887).

(2) O. Stoll, "Intern. Archiv für Ethn." vol. i, suppl., p. 106.

The fauna and flora, the climate and volcanic nature of the country have had here their usual influence on the thoughts and imagination of mankind. They have given birth to myths and religious conceptions, varying from place to place with local nagualism and totemism<sup>(1)</sup>, but always bearing the unmistakable stamp of their American origin. The universal genius of humanity has however also maintained its own and we find in America many a legend already known to us through populations of the old world; but single coincidences have nothing surprising and we can take heed of them when they happen to extend to whole groups of myths<sup>(2)</sup>.

In studying the legends of Tollan and of the rain-god Quetzalcoatl, we must lay much stress on Seler's conjecture<sup>(3)</sup>, that as a god of whirlwinds Quetzalcoatl was once connected with the tradewinds so important in the North-East of Mexico.

But in the North-East of Mexico we find the Huasteca and Pánuco in whose country according to the legends the forefathers of the Mexicans landed. If, as Seler believes, Quetzalcoatl bears in himself the mark of a Huasteca origin, we may credit this tribe with the paternity of all or part of this important legend. The numerous legends relating to this god or hero are however so varied in character, they are made up of so many different elements of mythical, historical, mythological, or even local origin, that we cannot hope to solve the problem at one stroke with one answer. The historical point of view must be separated from the mythological; according to

(1) Brinton, "Nagualism" Philadelphia, 1894); Stoll, *l.c.*, p. 6; the onomastics and calendars of the Aztecs, Mixteco-Tzapotecs and Mayas coincide in a remarkable manner.

(2) Paul Ehrenreich, "Die Mythen und Legenden der Südamerikanischen Urvölker" (Berlin, 1905); Ed. Seler, "Einiges über die natürlichen Grundlagen mexikanischer Mythen," in "Zeitschrift für Ethn.," vol. xxxix (1907).

(3) Seler, "Commentary to Codex Vaticanus B," p. 140-148.

the latter, Quetzalcoatl is either a rain-god, a wind-god, moon-god<sup>(1)</sup>, the planet Venus, a *panurgos* or a *demiurgos*<sup>(2)</sup>.

Surrounding influences played also their part in the development of material and moral civilisation as I will now endeavour to show.

## 2.

### MATERIAL CIVILISATION.

If we except the information supplied by the early authors and the very trustworthy paintings of the picture manuscripts, we rely here chiefly on archæological evidence; we may occasionally complete it by the study of the manners and customs of the present Indians.

Stone implements were made of all sorts of materials: flint [tecpatl], obsidian [itztli], andesite [teçontli], porphyritic and nephritic [chalchihuitl] stones, etc. Flint was chiefly used in Mexico for the great sacrificial knives and for various spear and arrow-heads. Obsidian, which does not exist in Yucatan and is uncommon in Oaxaca<sup>(3)</sup>, was used in the shape of small chipped knives, which were struck off in flakes from larger blocks, and are exceedingly common throughout the country. The same material was also employed for much larger implements often with numerous notches and the exact use of which remains uncertain.

Obsidian was also extensively used<sup>(4)</sup> for the purpose

(1) Seler, "Commentary to Codex Borgia," ii, pp. 54-55, 67, 78, 86. At the God's feast in Cholula, the heart of the victim was offered to the Moon (Duran, cap. 84, ii, pp. 120-121).

(2) Sahagun xii, v and vi, 21; Thevet, "Histoire du Mechique."

(3) Sapper, "Globus," vol. lxxvii, p. 306-307; Seler, "Gesammelte Abhandlungen," ii, p. 364.

(4) "Ausland," 1870, n. 47; Adela Breton, "Comptes-rendus of the eighteenth International Congress of Americanists" (New York, 1902), pp. 265-268.

of adornment, for masks, lip ornaments, earrings, plaques, bracelets, and even vases <sup>(1)</sup>. Nothing is more admirable than the patience it must have required to polish for days and days this exceedingly hard and brittle material and especially to hollow out the larger objects, some admirable specimens of which are still in existence.

Axes, hatchets and chisels were made of andesite and other stones, shaped into various forms and skilfully polished.

We also find stone beads strung on thin cords and worn round the neck with amulets as pendants. Those made of green stones either *chalchihuitl* (jadeite or nephrite) or *xihuitl* (turquoise) <sup>(2)</sup> were particularly valued. Various precious stones, such as nephrites and rock-crystal were cut into the shape of human or animal heads and other wonderful jewels were obtained in a similar way <sup>(3)</sup>.

We have a number of divine figures cut out of various stones and which, according to their size, served as amulets, domestic gods or public idols. Important monuments have escaped destruction by the hands of the fanatic Spaniard and have since been rescued from the bowels of the earth <sup>(4)</sup>. To the various parts of the land correspond

(1) E. Boban, "Le vase en obsidienne de Tezcoco," in "Revue d'ethnographie," vol. iii (1885), pp. 70-71.

(2) E. G. Squier, "Observations on the chalchihuitl of Mexico and Central America" (New York, 1869); Zelia Nuttall, "Chalchihuitl in ancient Mexico," in the "Am. anthrop.," new series, vol. iii, pp. 227 seqq.; cf. the fundamental work of Heinrich Fischer, "Nephrit und Jadeit" (Stuttgart, 1875, in-8); A. B. Meyer, "Jadeit- und Nephrit-Objekte" (America and Europe), in the "Publikationen aus dem königlichen ethnographischen Museum zu Dresden" (Leipzig, 1881, in fol.).

(3) Cécilie Seler, "Auf alten Wegen in Mexiko and Guatemala" (Berlin, 1900), p. 129; W. Lehmann, "Globus," vol. 90 (1906), pp. 60-61; H. Fischer, *ibid.*, vol. 85 (1904), n. 22; Seler, "Comptes-rendus of the Fourteenth International Congress of Americanists" (Stuttgart, 1906), vol. i, pp. 241-261. On the methods used for carving stone, cf. Seler, "Gesammelte Abhandlungen," vol. ii, pp. 635-640.

(4) Seler, "Gesammelte Abhandlungen," vol. ii, p. 767 seqq.

highly different styles of art. This is especially true for sculpture in the relief. The same style for instances is found on the funerary stelae of Xochicalco, Monte Alban and the Zapotec region. The Totonacs and Huastecs have an art of their own<sup>(1)</sup>. The sculptures of Santa Lucia Cozumalhuapa, Pantaleon and Palo Verde<sup>(2)</sup>, the work of Pipile Indians are of a decided Mexican character, though evidently under Maya influences. Palenque, Ocoingo, the numerous ruins of Yucatan, Campeche, Chiapas, Guatemala, Honduras and Salvador are all built in the Maya style<sup>(3)</sup>, while "Mexican-Toltec" sculptures are to be found at Mayapan and Chichen Itza<sup>(4)</sup>. Mexican monuments are characterized by a stiffer treatment of the human body, the heads showing little or no deformation; the numerals above 5 are still expressed by small circles, and there is no line round the hieroglyphics. The monuments of Xochicalco, Monte-Alban, etc.<sup>(5)</sup> show partly Mexican day-signs enclosed in the typical calculiform Maya frame and they generally express the number 5 by a horizontal bar. On the Maya monuments we find sets of hieroglyphs enclosed in what resembles an Egyptian cartouche (in Piedras Nigras) and, with the exception of the invariably dated typical "Initial series" long rows of calculiform hieroglyphics.

We can neither understand nor explain a series of stone ornaments in the shape of a horse-shoe<sup>(6)</sup> and which are to be found with and without sculptures, occasionally

(1) Seler, *ibid.*, vol. ii, p. 168 seqq. in the "Comptes-rendus of the Fifteenth International Congress of Americanists at Quebec.

(2) Cf. *supra* p. 27, note 10.

(3) On the various styles of architecture, cf. K. Sapper, "Globus," vol. 68 (1895), p. 165-169.

(4) Seler "Gesammelte Abhandlungen," vol. i, p. 669 seqq.

(5) Cf. *supra* p. 27, notes 6 and 7.

(6) H. Strebel, "Intern. Archiv für Ethn.," vol. iii (1890), pp. 16-28, 49-61; vol. vi (1893), pp. 44-48; A. Ernst, *ibid.*, vol. v (1892), pp. 71-76.

showing a complete closed circle. Some are richly decorated with human figures and with animals. A particular group seems to bear a toad or frog as the chief ornament.

Hardly less puzzling are the sculptures of the so-called "Palmas type" and a series of dumbbell-shaped stone objects, which were perhaps held in the hand while dancing and possibly monuments of the Totonac civilisation.

In certain parts of Oaxaca we find flat, fully-sized, sharply cut human heads<sup>(1)</sup>. As some of them show traces of nails or other fixtures, they may have originally been attached to the walls of temples or palaces.

Among the stone implements may also be mentioned the three footed mortars (*metlatl*) made of andesite and their rollers (*metlapilli*), both still used to-day as formerly for grinding Indian corn.

As we approach the isthmus the form and rich ornaments of these objects resembles more and more either those found in Venezuela and Columbia or those discovered in the West Indies. But here at any rate there is no possible confusion between the corn-mortars and the stone stools so often very low.

A fine grade of art is illustrated by the great stone boxes (*tepetlacalli*)<sup>(2)</sup> and offering-bowls (*quauhxicalli*) of which a few magnificent specimens exist in various collections<sup>(3)</sup>, by the Bilimec pulque-vase<sup>(4)</sup>, by stone masks<sup>(5)</sup> and alabaster vases.

Among metals, iron was totally unknown, as proved by its modern Mexican name, *tliltic tepoztli* or "black copper."

(1) Seler, "Gesammelte Abhandlungen," ii, pp. 362-364.

(2) *Ibid.*, pp. 717-765.

(3) *Ibid.*, pp. 704-711 and 712-716.

(4) *Ibid.*, pp. 913-952.

(5) *Ibid.*, pp. 910-912 and 952-958: Lucien de Rosny, "Archives de la Soc. Americ. de France," nouvelle serie, vol. i (1875), pp. 297-320.

Gold was delivered yearly to the Mexicans as a tax by several tributary cities of the Mixteca alta and baja. It was cast *à cire perdue*, hammered, polished and engraved. A very few admirable jewels have escaped the Spaniards' greed<sup>(1)</sup>; but all the finest and most precious objects were ruthlessly melted down. Textual evidence gives us good information as to how they cast metals in Mexico<sup>(2)</sup>.

Great works of art were made of gold and silver (coztic teocuitlatl, iztac teocuitlatl). Such were the giant disks of the Sun and Moon, now lost beyond recovery, and sent in 1519 by Cortes to the Emperor Charles V<sup>(3)</sup>. Gold was also used for all sorts of jewels, chains adorned with shells and amulets (to be hung from the ears, neck, and arms) finger rings, nose rings, lip ornaments, bracelets, etc. Thin gold leaves covered portions of the precious stone mosaics, and of the official or festal throwing sticks<sup>(4)</sup>.

Gold was carried about in the rough form of bars or plates, dust or nuggets, especially when it was brought as a tribute. Gold dust in quills of a given length and thickness was used as a kind of coinage.

Of the other metals the most often mentioned are copper (tepoztlī) and tin (amochitl); copper was cast pure, but never intentionally alloyed with tin to make bronze<sup>(5)</sup>, a metal unknown before the Spanish conquest. Copper

(1) Cf. the engravings in Nadaillac, "L'Amérique préhistorique" (1883), pp. 369-370; Ant. Peñafiel, "Monumentos del arte ant. mexicano," Atlas, vol. i, pp. 111-114. (The object on plate iii, fig. 5, is of silver, not of gold); Berendt, "Zeitschrift für Ethn. vii Verhandlung," p. 273 seqq.

(2) Seler, "Gesammelte Abhandlungen," vol. ii, pp. 620-634.

(3) See Cortes' letter from Villa Rica (Gayangos' edition, Paris, 1866, pp. 29-33); Albr. Dürer, published by Friedrich Leitschuh (Leipzig, 1884, p. 58); Paris, Mexican ms. 22 (unpublished ms. of 1519); Fred. Muller, "Trois lettres sur la découverte du Yucatan et les merveilles de ce pays" (Amsterdam, 1871, in-8, 35 p.).

(4) W. Lehmann, "Globus," vol. xc, pp. 321-322.

(5) Cf. *supra* p. 133, note 2.

was used for axes, chisels, hammers and other tools. Thin T-shaped, slightly hollowed out implements with a crescent-shaped edge have been found in such quantities in some parts of Oaxaca, in given places that they have been supposed to have been used as money. But they are nothing else but a simple kind of knife with a thin blade<sup>(1)</sup>.

New researches in the technical laboratory at Lichtenfeld have proved that the edges of these copper axes have been considerably hardened by cold hammering<sup>(2)</sup>.

Numerous copper ornaments have been found, especially filigrane-woven rings beautifully decorated; also beads and shells. The Tarasques of Michoacan worked the latter in a remarkable filigrane style, which has given birth to much technical controversy<sup>(3)</sup>.

We have very little information about the use made of tin and other metals.

Owing to their rapid destruction very few wooden tools, vessels or ornaments have been preserved. The costly throwing-sticks, from the style of their engraving may be ascribed to the Tzapotec civilisation<sup>(4)</sup>. We may also mention the wooden drums *teponaztli* which are partly covered with rich and interesting sculptures<sup>(5)</sup>.

The following objects were made of bone *omitli*: bone daggers used to let blood for purpose of mortification:

(1) Seler, "Gesammelte Abhandlungen," vol. ii, pp. 365-366.

(2) The results of analysis made for Seler have been exposed by him at Quebec at the Congress of Americanists.

(3) Seler, "Gesammelte Abhandlungen," vol. iii, pp. 100-101.

(4) Ant. Peñafiel, "Monumentos," vol. ii, pl. 313; D. J. Bushnell, junior, in the "Amer. Antrop.," new series, vol. vii (1905), pp. 218-222; E. Seler, "Intern. Archiv für Ethn." vol. iii (1907), pp. 137-148 and "Gesammelte Abhandlungen," vol. ii, pp. 368-396; Zelia Nuttall, "Peabody Museum, Archaeol. and Ethnol. papers," vol. i, n. 3 (1891); Hj. Stolpe, "Intern. Archiv für Ethn.," vol. iii, pp. 234-238; H. Strebel, *ibid.*, vol. iv (1891), pp. 255-257; Seler, "Globus," vol. 61, pp. 97-99.

(5) L. Frobenius, "Intern. Archiv für Ethn.," vol. iii (1896), p. 252; Seler, "Mitteilungen der anthropologischen Gesellschaft zu Wien" (1904), p. 222 seqq.



bone piercers, bradawls, needles etc.; human or animal bones, chiefly leg bones, with numerous incised transversal furrows, were used as a kind of rattle by rubbing to and fro on them a shoulder-blade. Some of these bones are elaborately engraved<sup>(1)</sup>.

Sea shells were greatly valued. Large ones were made into trumpets (*tecciztli*)<sup>(2)</sup>. Those of smaller size (*tapachtli*, *cilin*, *eptli*) were pierced through, strung into necklaces or bracelets and worn round the neck, arms, wrist and ankles especially during dances. Or else they were cut into thin slices each of which gave a spiral ornament. This "wound up wind-jewel," (*eca-ilacatz-cozcatl*) was the particular attribute of *Xolotl* and *Quetzalcoatl*. The axis of a shell could also be made into a pendant and trapeze-shaped flat amulets could be cut out of mother-of-pearl, from most of the flat seashells.

White, red and yellow shells, especially flat ones could be used in masks and mosaiks for the white of the eye, the red of the lips etc., and were employed in many costly kinds of incrustations. Elegant finger-rings were cut out of seashells. Big shells in the shape of round or oval disks, are found with large scenes engraved upon them<sup>(3)</sup>. They are astonishingly like those discovered in the mounds of the South-Eastern parts of the United-States; but it would be premature to jump to a conclusion as to the origin of Mexican civilization.

Mexican ceramic art is characterized by the absence of the potters' wheel, the first instance of which occurs in the Maya civilization of Yucatan<sup>(4)</sup>. But the Mexican potter

(1) Seler, "Gesammelte Abhandlungen," vol. ii. pp. 672-694.

(2) *Ibid.*, p. 702.

(3) W. Lehmann, "Globus," vol. 88 (1905), pp. 285-288; Holmes, "Art in shell" (Washington, 1884).

(4) On a very primitive potter's wheel called "Kabal," cf. H. Mercer, "Bulletin of the free museum of science and art of the University of Pennsylvania," 1897, n. 2; Alfred M. Tozzer, "Comparative study of the Mayas and Lacandonas, Archeological Institute of America report" (New York, 1907, n. 2).

attained nevertheless an astonishingly elaborate finish, a great regularity in form and a decided elegance (1).

The various local types show marked differences which are of the highest importance for ethnographical geography.

The forms used in the valley of Mexico are entirely different from those found in Cholula, Tlaxcala and their colonies.

Mexican pottery can be divided into two classes; the first is a light yellowish ruddy ware with black ornaments; the second has a smooth polish and is of a dark red colour. Of the former are made plates, bowls, three-footed dishes and *Molcajetes*; of the second, chiefly cups. The potsherds found at Tezcoco, Huexotla and Coatlinchan are more richly painted and more varied in decoration.

The Iztapalapa pottery forms a connecting link between the valley types and those found at Teotihuacan; mixed with it are thick fragments with broad yellow bands on a red background, similar to those discovered by Seler on the Monte Alban and at Xoxo, in the Tzapotec country.

Nothing is more beautiful than the polychrome Cholula vases, which were exported in every direction and are frequently to be met with in the Mixteca; these elegant and highly finished vessels often bear paintings in the style of the picture manuscripts; some of the finest specimens are to be seen in the collection of Dr. Solouren at Oaxaca.

We find at Atlixco curious animal-shaped glazed vases; a partly similar technique occurs also in Tehuacan and Teotitlan del Camino.

(1) It is hardly conceivable that Schœbel in presence of so many beautiful and highly artistic specimens of Mexican, Central-American and Peruvian pottery, could speak of the "absence de toute beauté plastique dans les créations de l'art américain autochtone," as of a well established fact." ("Comptes-rendus of the First International Congress of Americanists," Nancy, 1875, vol. ii, p. 271 seqq.

The Huastecs, on the contrary, have vases of their own, such as melon-shaped pots with black and red paintings following closely the shape of the vessels, or adorned with pentagramms, Saint-Andrew's crosses, etc. (1)

Strebel's excavations have enabled us to quote, as characteristic of the Totonac region, the "Ranchito de las Animas type" (2). Although parts of the district were later on influenced in a marked degree by Mexican art, yet we can recognise as purely Totonac, vases painted red (as a rule) and bearing incised ornaments. The Mexican style is represented in these parts by the "Cerro Montoso group" with a fuller decoration painted in white or yellow.

The Tarascs as ceramists stand far below the Mexicans. We find on their pottery a curious black and white decoration, let into the clay and covered with other patterns of a brilliant red. Their dislike for symmetric ornaments is worthy of remark (3).

In the Tzapotec region we meet skilfully modelled and decorated figure vases (4); also light grey or black pottery; the few known coloured vases resemble greatly those of Cholula.

Stoll has observed (5) a great variety in the names assigned to the commonest vessels by the various Guatemala languages, names which are again different from those used in Mexico. He infers that each tribe evolved on its own account its own ceramic shapes: flat dishes to bake tortillas (*comalli*), three-footed mortars with a serrated surface to grind pepper (*chilli*) to *molli*, water jugs,

(1) Seler, "Gesammelte Abhandlungen," vol. II, p. 326 seqq.

(2) H. Strebel, "Über Ornamente auf Tongefaszen aus Alt Mexiko" (Hamburg-Leipzig, 1904, in-4) p. 1-2.

(3) Seler, "Gesammelte Abhandlungen," vol. III, p. 97-98.

(4) Seler, *ibid*, vol. II, p. 338, fig. and "Veröffentlichungen des königlichen Museums für Völkerkunde" vol. I, 4 (1890) p. 182-188.

(5) Stoll, "Intern. Archiv für Ethn." vol. I, Suppl. p. 90.

etc., religious objects such as censers and incense ladles (1), rattles, flutes and whistles, painted or not (2).

Characteristic features of the various sites are the terra-cotta heads and images, chiefly idols, which were carried by trade in every direction. In the Mexican valley we find among them nearly every god of the Mexican Pantheon: Quetzalcouatl, Xolotl, Xipe, Xochipilli, Macuilxochitl, Tezcatlipoca, Uitzilopochtli. The only missing deity is the rain-god Tlaloc, whose images were always made of green stone. Among the goddesses may be mentioned Xochiquetzal, Chalchiuitlicue and Chicomecouatl (3).

We cannot yet explain the tiny but very beautiful terra-cotta heads, found in such quantities at Teotihuacan and also in Seler's excavations at Tacuba and Cholula (4). The diminutive earthenware vessels from the lake of Chapala are probably miniature ex-votos (5).

Highly interesting for the history of ornamentation and the stylisation of types are the curious terra-cotta stamps used by the noble Mexican women to print on their faces coloured patterns similar to those we see on the divine faces painted in the Nuttall-Zouche Codex. We must also pay attention to the spindle-whorls, the shape of which undergoes marked local variations.

Practically not a single specimen of original textile art

(1) Very fine incense ladles have been published by Seler, "Gesammelte Abhandlungen" vol. II, p. 856 seqq.

(2) On musical instruments, cf. Seler, *ibid*, p. 695-703. Aztec flutes, giving the scale, a, b, c *sharp*, e, f *sharp* have been published by Ch. K. Wead, "Smithsonian Institution Annual Report," 1902, plates 2-3. On flutes and whistles, cf. the short remarks of J. Kollmann, "Festschrift für Ad. Bastian," 1896, p. 557-574.

(3) Seler, "Gesammelte Abhandlungen" II, p. 307 seqq.

(4) *ibid*. pp. 314-316; Zelia Nuttall, "American journal of archæology" 1887 p. 327; Sören Hansen, "Revue d'ethnographie," vol. vi (1897) p. 247-250 attempts a classification by types.

(5) Fr. Starr, "The little pottery objects of Lake Chapala" (Chicago 1897); Seler, "Globus, vol. 72, p. 240-241.

has survived; but we know from the early Spanish narratives, the tribute lists and the picture manuscripts what splendid and precious stuffs once existed. A number of beautiful designs are preserved in the paintings of Codex Magliabecchi. The warm region of the Huastecs was rich in cotton and celebrated for its beautiful woven many coloured cloth (*centzon tilmàtli*)<sup>(1)</sup>.

According to Boturini<sup>(2)</sup>, the Mexicans once used knotted cords, analogous in character to the Peruvian quipos. This assertion is confirmed by the expression *xiuh-molpilli* "knotted years" for the 52 year cycle. In the *Mapa de Tepechpan* the first year of each of these cycles is marked by a knot.

By a great good fortune, a few of the precious feather-mosaics have escaped destruction. They show examples of two distinct techniques<sup>(3)</sup>. In the first the feathers are woven together into a kind of web, in the other the design was first painted in black on a stencil plate of bark or fibrous paper and then covered over with pieces of feathers carefully cut and stuck on. The finest known specimens are at Vienna and come from the castle of Ambras; they consist of shields, fans and of the back portion of head dresses<sup>(4)</sup>. Old inventories mention quite a number of similar objects, once sent to Spain, and

(1) Sahagun X, cap. 29, § 8.

(2) Boturini, "Idea de una nueva historia" p. 2 and 85-87.

(3) Seler, "Gesammelte Abhandlungen," vol. ii, p. 641-663.

(4) Seler, *ibid.* p. 397-419 and 664-668 and "Intern. Archiv. für Ethn.," vol. v (1892) p. 168-172; Nuñez Ortega, "Añales del Museo Nacional de Mexico" vol iii, p. 281-291; Zelia Nutall, "Intern. Archiv für Ethn.," vol. v, p. 34-53 and vi, p. 95-97; the same, "Peabody Museum, archæological and ethnographical papers," No. 1 (1888); the same, "Comptes-rendus of the VIIIth International Congress of Americanists" (Paris) p. 453-462; the same, "Report of the commission, Columb. hist. exhibition at Madrid 1892" (Washington, 1895) p. 329-337; the same, "Abhandlungen der königlichen zoologischen, anthropologischen, ethnographischen Museums zu Dresden," 1887; Fr. Heger, "Annalen des K. K. naturhistorischen Hof-museums," vol. vii. (1892), pp. 379-400.

now disappeared. The feathers used were those of the Quetzal, the turkois-bird and spoonbill, and those of various parrots, ducks and humming-birds.

Hardly less remarkable are the mosaics made of more or less precious stones, shells, etc. (1). No less than twenty-three pieces are known in various museums, the finest being in London, Rome and Berlin. The stones when cut to shape are embedded in a peculiar substance (tzinacauquauhcuitlatl) covering the whole surface of the object to be decorated; the latter were chiefly of wood, rarely of bone or stone. Two masks are skilfully prepared human skulls. The usual shapes are shields, helmets, knife handles and trinkets. The small cup-shaped heads and the double jaguar in the Berlin Museum are of doubtful meaning. Most of these objects apparently come from the Eastern provinces, *i.e.* Tabasco. We know from other sources that it was only under king Ahuitzotl, with the conquest of the Tzapotec district, that the Mexicans became acquainted with turkois-mosaics, shields, earrings, etc.

The question of dress is too intricate to be studied in this short paper. It not only indicated ethnical differences, but also the social rank of the bearer, was compulsory in many cases and is only to be explained by a study of social etiquette (2). Little being known as yet on the latter subject, all we could do would be to enumerate a number of disconnected facts, a thing hardly worth doing in these pages. In various provinces we still find the old distinctive marks (3) in clothes, the hair, etc.; but all these are rapidly dying out (4).

(1) W. Lehmann, "Globus," vol. xc. (1906), pp. 318-322.

(2) On divine costumes cf. Seler, "Gesammelte Abhandlungen," vol. ii., pp. 422-508. On ornaments and distinctive military and social badges, cf. *ibid.*, pp. 509-619.

(3) For the Amateca of Vera Cruz, cf. Ten Kate, "Zeitschrift für Ethn.," vol. xxi. (1889), p. 668.

(4) Cäcilie Seler, *Comptes-rendus of the Fourteenth International Congress of Americanists* (Stuttgart, 1905), vol. ii., p. 425.

The great importance of the distinction of workers into various guilds or corporations of sculptors, goldsmiths, featherdressers, etc., lies in the fact that each belonged to a particular *gens* or clan, and worshipped its particular deities. According to Sahagun, sculptors belonged to the Xochimilco clan, goldsmiths to the Barrio Yopico, featherdressers to the *gens* Amantlan. An interesting detail is the word *toltecatl* which means, according to Molina "official del arte mecanica, ò maëstro," and is derived from the name of the Toltecs, a good evidence of their technical capacities. *Tolteca-itztli* "Toltec-obsidian" is the name of a stone which Hernandez (1) describes as a "*lapis novacularis, variata nigro ac minii colore, cuius pulverem admixtum crystallo ferunt argemata discutere, acuere visum, et carnem eisdem supercrescentem absumere.*"

The foundation-stone of Mexican civilization and institution was agriculture; but the most primitive methods were alone in use (2). Draught animals, were unknown (as indeed all domestic animals, except dogs and poultry), and also the plough, and it was found sufficient to roughly scrape the soil with a wooden hoe, called *huictli*, curved on one side (3). Before sowing, they burnt the weeds. Agricultural work began after the first rains; Indian corn was carefully sown in tiny holes, and sunk at regular intervals, so that it grew in parallel rows; men, women and children worked together in the fields; maize was sown in March, April or May, and reaped late in the autumn. Various religious ceremonies, to be named

(1) Hernandez, "Historiae rerum medicarum Novae Hispaniae Thesaurus" (Rome, 1651, p. 330).

(2) On agriculture in Mexico, cf. Max Steffen's inaugural dissertation, "Über die Landwirtschaft bei den altamerikanischen Kulturvölkern" (Halle, 1882).

(3) The agricultural implement called *coa* in the Spanish texts has nothing to do with the Mexican word *coatl*, "snake," but is a corruption of *quauhli*, *quauh*, "bois."

later on, marked each stage of the work. The maize heads were broken off with a spade made from deer's antlers.

They sowed not only maize (*cin-tli*), but also beans (*etl*), both of which all botanists describe as indigenous in the New World.

On the shores of the soft water lakes were to be seen the so-called "floating gardens" (*chinampa*), i.e. plots of land fenced in by rows of posts and rising only one foot or so above the water level <sup>(1)</sup>; they were used for growing flowers and vegetables.

The very unequal natural watering of the Mexico valley made artificial irrigation a necessity and tiny canals watered every field. The same thing according to the old chronicles took place in Cholula, Meztitlan, etc. <sup>(2)</sup>.

The fields were enclosed by stone-walls or by live hedges of agaves.

To make bread they opened the maize-pods, cooked the corn with lime and then ground it to flour from which cakes were kneaded and baked. These "tortillas" were called *tamalli* and eaten with various spices and flavours <sup>(3)</sup>, the most commonly used being pepper (*chilli*). Fasts consisted chiefly in the total abstinence from pepper. Every eight years, at the *atamalqualiztli* feast, they ate pure and simple water cakes to save food <sup>(4)</sup>.

Their most important beverage was cocoa, which under various forms and flavoured with honey, vanilla, etc., was drunk by chieftains and warriors <sup>(5)</sup>. The use of

(1) Clavigero, "Historia de Messico," i., p. 339

(2) Gomara, "Cronica de la Nueva España," cap. 61 and 116: "Doc. ined. de Indias," iv., p. 546.

(3) Sahagun, viii., cap. 13.

(4) Sahagun, ii., cap. § 2.

(5) Torquemada, xiv., cap. 10. The word "cocoa" in Mexican *cacauatl* is derived from a root expressing the luxuriant warmth of the tropics (cf. *cacauaca ni* "tener gran destemplança y calor en el cuerpo," Molina). In Guatemala, cocoa-beans are still used as a complementary coinage for small payments.



agave wine or "pulque" (*octli*) was a rule only allowed on certain feast-days and even then only to certain persons (1). The priests used tobacco (*ietl*) as a narcotic and to produce extatic moods. They chewed it in pills (*yequalli*) (2), or at the end of banquets, they smoked it in cigars (*poquetl*) (3). The Chichimec tribes intoxicated themselves by the use of a prickly plant (*tziuactli*) (4) or of the narcotic mushroom (*peyotl*) (5).

The plan of the houses is worthy of a careful study as it plays an important part in many early social conceptions, especially in the formation of clans (6), not only with the Pueblo tribes, but also with the other Indians of North and South America. We are sadly in want of systematic research on the subject, although even modern native habitations might well repay a careful study. However, we can establish, as it is, a marked contrast in that respect between the customs of the Chibcha tribes in the isthmus district (7) and Mexican or Central-American civilization; in the latter each family has generally its own house, with one hearth and the necessary outhouses such as maize-stacks, steam-baths and poultry-sheds on posts.

The architecture of houses depends entirely on the

(1) Sahagun, iv., cap. 21.

(2) Sahagun (ii., cap. 25) spells *yyaqualli* instead of *yequalli*.

(3) Cf. Oviedo (Ternaux-Compans edition, Paris, 1840, pp. 211-212). Poquete or better *poquetl* is probably to be derived from the Mexican *poc-tli*, "smoke," and *yetl*, "tobacco."

(4) Historia de Colhuacan y de Mexico, ii., § 33, published by W. Lehmann, "Journal de la Société des Américanistes," new series, vol. iii., n. 2, 1906.

(5) Sahagun, x., 29, § 2 and xi., 7, § 1.

(6) L. H. Morgan, "Houses and House-life of the American Aborigines," in the "United States geographical and geological survey of the Rocky Mountains region" (Washington, 1881), cap. x., pp. 222-250; and in Yucatan and Central America, *ibid* pp. 251-276; Seler, "Gesammelte Abhandlungen," vol. ii., pp. 279-280.

(7) Sapper, "Archiv für Anthropologie," new series, vol. iii. (1905), p. 23 seqq.

climate, the vegetation and the frequency of earthquakes. In the *terra caliente* houses are covered with palm-leaves and further North, with *Yucca*. Houses bound up with creepers or bark can resist an earthquake. In the highlands houses are made of mud or of flat bricks (*xamill*) baked in the sun. These "adobe" are cool in Summer and warm in Winter. In the same districts houses have passages for interior commodity and flat roofs, with a slight incline to let the rain water run off.

Larger buildings, like the temple-pyramids, were built of earth and stones (*chihualtepetl*) <sup>(1)</sup>, with transversal layers of mortar <sup>(2)</sup> and unbaked bricks and an exterior stone casing, often elaborately decorated with sculptures. In the Mexican country, the sides of temple-pyramids were accurately directed towards the four points of the compass; on the top was the sanctuary to which led one or more staircases in several stories. Palaces and other buildings were made of massive stone in skilfully cut blocks. The arch was unknown, but in various Maya ruins (Palenque, etc.) we find remarkable innovations, both as regards the superposition of blocks, supports for beams and shutters <sup>(3)</sup>.

Inside each house the holiest place was the family fire, burning between three stones <sup>(4)</sup>. The floor was covered with skilfully woven and coloured reed mats (*petlatl*). The idea of command in Mexico and Central America is

(1) The Mexican expression *t̄aqualli*, "closed in" (i.e., "a pyramid") is recognisable in the Maya word *t̄ak*, "building," "pyramid."

(2) Scler, "Gesammelte Abhandlungen," vol. ii., p. 336.

(3) H. Holmes, "Archaeological studies among the ancient cities of Mexico, Field Columbia Museum, Anthropological series," vol. i. (1895-1897).

(4) Historia de Colhuacan y de Mexico, i. § 2: *Mixcoatl, Tozpan Ihuitl yehuantin in totoca in tenamaztli e teme*, "Mixcoatl, Tozpan and Ihuitl, these are the name of the three stones of the hearth." Cf. the corresponding *xan* (i.e., "the hearth") in Guatemala (Stoll, "Intern. Archiv für Ethn.," vol. i., suppl., p. 88.

inseparable from the idea of the mat on which the master sits. Thus is to be explained not only the Mexican metaphor *petlatl icpalli* <sup>(1)</sup>, but also the Quiche expression for "master": *ah-pop*, i.e. "lord of the mat" <sup>(2)</sup>. In the picture manuscripts the king's throne is painted yellow and is drawn like a woven reed. They also used baskets hard and soft (*xiquiuitl, tompiatl*), wooden stools (*icpalli*) and wicker chairs (*tolicpalli*). The beds stood on four posts and were made of mats or skins stretched on a frame. It is doubtful whether the Mayas originally used hangings as suggested by wooden posts occasionally found in the ruins; but it is quite certain that the hammock (*cochizmatlatl*) was imported from the West-Indies by the Spanish invaders.

### 3.

#### SOCIOLOGY.

The corner-stone of society is the *gens* or clan: *calpolli* (the "great house") or *chinan-calli* or *chinamitl* <sup>(3)</sup> (the "hedge") corresponding to the Guatemaltec *nim-ha* (the "great house") or *chinamit* <sup>(4)</sup>. A correct view of this institution is necessary not only to understand the whole social organisation, but also to understand law and religion, both so intimately connected with the existence of these "clans." At the origin each ancestor ruled his

(1) For *petlatl icpalli*, compare *icpalpan petlapan nica* "tener cargo de regir y gobernar" [Molina], literally "to sit on the throne and mat."

(2) Torquemada, ii., 11, p. 342.

(3) The most important sources are Alonso de Zoritas' report to King Philip II., published in Ternaux-Compans, vol. xi., and by Icazbalceta, "Nueva coleccion de documentos inéditos para la historia de Mexico," vol. iii.; Juan Solarzano y Pereyra, "De Indiarum jure" (Lugduni, 1672, 2 vols. in-fol.); the same, "Politica Indiana" (Madrid, 1776, 2 vols. in-fol.)

(4) Stoll, "Intern. Archiv für Ethn.," vol. i., suppl. p. 6.

“clan” (he himself being one of the rulers of the wandering tribes), and had his own particular protecting god or even totem, as nowadays each *barrio* (the present substitute for a “gens”) has its patron saint. Exogamic marriages must, of course, have disturbed the logical course of things, and a study of Mexican proper names might lead to valuable inferences in that direction. It is to be supposed that the original immigrant clans divided the land between themselves. Each *calpolli* in turn, divided all the fertile land (*altepetlalli*) between its members and each partial family, in which the son as a rule succeeded to the father, soon became practically independent. Their relationship to the *calpolli* re-appeared each time a family died out, for the clan claimed its land. The individual families enjoyed from generation to generation the free use of the land, but did not have the unrestricted property of the soil (<sup>1</sup>). The distribution, overseeing and administration of the *calpolli* territory fell to the lot of the *calpollec* (*calpollé*) “the inhabitant of the great house,” the head man of the clan, a function which was by no means hereditary.

To the land of the clan (*calpol-lalli*) was opposed the land of princes (*pillalli*), which payed no taxes. It was a kind of private estate and on it worked the *mayéqué* (serfs). The latter lands, like mediæval fiefs could be lent by the owners; we then have a second class of *pillalli* belonging to minor chieftains who could bequeath them to their sons but not sell them; they returned to the prince when the occupant’s family died out. A third class of *pillalli*, the *tecpantlalli*, also not subject to be sold, belonged to the palace servants (*tecpantlaca*, *tecpan-pouhque*), who formed the king’s body-guard (<sup>2</sup>).

(1) Torquemada, 14, ii., p. 545; Zorita (Icazbalceta’s edition), iii., p. 93).

(2) Torquemada, 14, 7, ii., p. 545-546 describes fully the three kinds of *pillalli*.

Part of the *calpolli* lands were used by the clan for the maintenance of the soldiers (*mil-chimalli*) (1). A special condition was assigned to the temple lands or *teutlales* (2) belonging to the priesthood, which formed a caste or order. The labouring class consisted of *mayerque* or *tlalonaite* (earth hands) workmen with no property of their own and belonging themselves bodily to the owner of the land; they were not members of a *calpolli*. Their origin is difficult to explain. Were they remains of earlier tribes or were they merely individuals expelled from the clans in the course of time through over-population or other causes? The ordinary peasants were called *macehualtin* (3), (singular *maceualli*). Topographical charts bearing the hieroglyphs of all the place and owners' names illustrated clearly by the use of different colours the respective borders of royal, noble and *calpolli* land (4). The names of the inhabitants were put down on census-lists and tax-lists enumerated the tribute to be exacted in each village and each plot of land.

The annual tax was a third of the fruits of the field and of the insignificant herds (5). Except during war it does not seem to have been oppressive and corresponded fairly well with the fertility of the soil (6).

At the head of the state stood the king (*tlato*) (7), who in due form and ceremony was chosen, with the approval of the kings of Tezcoco and Tacuba (8), for his personal merits, bravery and skill. His electors were the princes

(1) Torquemada, *l.c.* p. 546.

(2) "Carta de D. Martin Cortes al Rey D. Felipe II sobre los repartimientos y clases de tierras de Nueva España" (1563), in the "Documentos inéditos del Archivo de Indias," vol. iv., p. 414.

(3) Torquemada, ii., cap. 89.

(4) Torquemada, ii., p. 546.

(5) Gomara, "Crónica de la Nueva España" (Barcia's edition), cap. 77; Herrera, *Decad.* ii., lib. 7, cap. 12.

(6) "Carta de D. Martin Cortes," *l.c.*, p. 443.

(7) Zorita, *l.c.*, p. 91.

(8) Zorita, *l.c.*, p. 79-81.

and high dignitaries, the minor functionaries, the warriors who had distinguished themselves in battle, the head men of the guilds and clans and finally the priests (1).

The king had under him the princes and minor chieftains, and the heads of the clans. Plurality of kings as at *Tlaxallan* always corresponds to a primitive plurality of attributions or "*parcialidades*." The king had the highest juridical authority in all civil and criminal cases; he governed the country and led the army. The various dignities of the state were partly assigned to noblemen or to members of the royal family and partly to ordinary citizens, especially to distinguished warriors. There was a supreme state-council and bodies of judges for criminal and civil cases. The *Ciuacouatl* assisted the king as a kind of high chancellor (2).

The various known titles of the members of these law-courts are derived, partly from place-names, partly from temple-districts, sanctuaries or clan-names, the latter having originally formed a kind of peerage.

The origin of these titles and dignities is ascribed to king Itzcouatl who, when he overcame Azcapotzalco, founded feudal aristocracy, by dividing among his followers the conquered lands of the Tepaneca district (3).

Such titles as Tlacochealcatl, Tlacatecatl, Ezuauacatl and Tlillancalqui are to be explained as the names of clan-chieftains who were originally promoted to these functions (4).

The legal proceedings, which were expressed by hieroglyphics in a fairly satisfactory way, were exceedingly

(1) Sahagun, viii, cap. 30.

(2) Sahagun, viii, cap. 14-15 and 37; Codex Mendoza, fol. 69 (Lord Kingsborough's edition).

(3) Tezozomoc, "Crónica mexicana," cap. 15.

(4) According to Zorita (*l. c.*, p. 109) a magistrate's appointment entitled him to the possession of feudal estates not transferable to his heirs.

severe, draconian, but on the whole, just. Almost all the crimes and a number of minor faults were punished by death or slavery (1). The judges were both free in mind and incorruptible. In *Tetzcoco* besides the usual law court sessions, there was a special one (*nappoualtlatolli*) every eighty days, in which every possible kind of case could be judged (2). A kind of right of asylum must have existed, for to set foot in the king's palace freed a slave (3).

Traces of a matriarchal state may, as almost everywhere in Central America be sought for in such expressions as *tonan, tota* "our mother," "our father," in which the word "mother" is placed first (4). The Mexican expression *nammati "tenerà otro por patron"* (Molina) is derived from *nan-tli* "mother." In Mexican the thumb is called *mapil-tecutli* "the lord of the finger," but in Maya *na-kab* "the mother of the hand": surely this is more than a mere metaphor. On the other hand daughters often did not inherit at all, though, among the Tarascs, the child seems to have belonged to its mother's clan (5).

At the head of the priesthood stood two high priests equal in rank, the *Totec tlamacaçqui* and the *Tlaloc tlamacaçqui*; the first served the god *Uitzilopochtli*; the other, the rain god *Tlalocantcutli*. They were both of them learned and righteous men, appointed by choice to their high situation (6). In matters of the highest gravity they

(1) Aztec law has been thoroughly studied, with full bibliographical references by Josef Kohler, "Kulturrechte des alten Amerika, i. : "Das Recht der Azteken" (Stuttgart, 1892, iii-8).

(2) Torquemada, i., p. 168, cap. 53.

(3) Andr. de Alcobiz, published by Icazbalceta, "Nueva colleccion de documentos inéditos," vol. iii, p. 313.

(4) "Historia de Colhuacan y de Mexico" (Lehmann's edition in the "Journal de la Société des Américanistes, 1906), ii., § 54. Cf. Olmos, p. 211 seqq., metaphor n° 2: "Padre, madre, ..." = *nantli, tâtli, ...* (i.e. "mother, father, ..." the order being reversed).

(5) Selser, "Gesammelte Abhandlungen," vol. iii, p. 104.

(6) Sahagun, iii, ap., cap. 9.

were called to the king's council; it was they who consecrated the newly-elected kings, declared war, etc. Their title was *Quetzalcouatl*, for they were considered as the direct followers of that great hero. One of the most deeply respected of all was the high priest of Mitla. Once a year he had to imitate an episode of the life of Quetzalcouatl; although he always lived in temperance and chastity, he had on this occasion to become drunk and otherwise misbehave himself; according to the legend Quetzalcouatl having in a fit of drunkenness assaulted his sister Quetzalpetlatl (1).

Hardly less honoured were the ordinary priests (*papa-topiltzin*) who killed the victims during the festal sacrifices. The *Chachalmeca* (2) inherited from generation to generation the right to assist the priest by holding the feet and neck of the victims.

There were various kinds of priests: the old priests (*quaquacuiltin*) (3); the special priests (*teouaque*) (4), and priests corresponding in rank to acolytes (*tlamacaçton*), deans (*tlamacaçqui*), or vicars (*tlenamacac*), the elected sacrificer having authority on the three latter classes (5). Sahagun further mentions priests with the rank of princes, priests with the rank of warriors, singers, musicians, young priests and priestly children (6).

The *Mexicoteohuatzin* was the overseer to the superintendents of priestly colleges. Subordinate to him were other overseers called *Uitznahuateohuatzin* and *Tepanteohuatzin* (7). In every temple each priest had a special

(1) Burgoa, "Historia de la provincia de predicadores de Guaxaca," seg. part. (1674), cap. 53; "Historia de Colhuacan y de Mexico," i, § 44 seqq.

(2) Duran, Tratado 2, cap. 3 (ii., p. 92-93); Codex Ramirez. p. 100).

(3) Sahagun, ii., cap. 20 and passim.

(4) For instance priests of Uitzilopochtli (Sahagun, iii, cap. 1, § 2),

(5) Sahagun, iii., cap. 9.

(6) Sahagun, ii., cap. 25.

(7) Sahagun, ii., Ap. § 9.



function as sacrificer, soothsayer, master of ceremonies, hymn composer, singer, musician, temple sweeper, etc. In Mexico theatrical displays were grafted on to many religious ceremonies, either comical in nature as during Quetzalcoatl's feast at Cholula <sup>(1)</sup>, or serious as for the feast of the earth-goddess <sup>(2)</sup>; but they never developed into anything like a dramatic production.

#### 4.

### SPIRITUAL CULTURE.

The spiritual culture in Mexico and the neighbouring countries was dominated by religion <sup>(3)</sup>, as was every other part of private or public life. A strongly organised body of priests condensed into a system not only the old tradition, but also all cosmographical and mythological conceptions. It is therefore not surprising that in hardly any point do we find mythology separated from other branches of thought. As it lies before us, Mexican science is a great piece of machinery without beginning nor end, a complicated piece of clockwork where every cogwheel works on another one. We know very little about popular beliefs which must be distinctly opposed to all these speculations of the priests who, through their love of systematisation and symbolism, through their combinations of numbers and astrology, have done away

(1) Duran, cap. 84; ii., p. 123-124.

(2) Sahagun, ii., cap. 30.

(3) Besides Seler's fundamental works may be mentioned: Müller, "Geschichte der amerikanischen Urreligionen" (Bale, 1867); Häbler, "Die Religion des mittl. Amerika" (Münster, 1899). K. Th. Preuss' numerous papers (in the "Globus," "Archiv für Religionswissenschaft, Zeitschrift für Ethn." of Berlin, "Mitteilungen der Anthropologischen Gesellschaft zu Wien," "Zeitschrift der Gesellschaft für Erdkunde zu Berlin" contain many parallel explanations and conjectures, often too audacious to be generally accepted.

with nearly all the primitive and typical conceptions. Religious ceremonies, however, have frequently preserved ideas and circumstances which the priests had eliminated from the systematic framing of their science. We must also remember that the Mexican Pantheon or "Pandemonium" lacks of unity and is by no means throughout of Mexican origin. The task of the learned priests was no doubt to adapt and assimilate foreign deities, as for instance the Huastec earth-goddess, the Yopi and Tzapotec goddess Xipe, etc., assimilations which are by no means recent. The highly complicated formation of the cult, the *tonalamatl* and the picture writing, supposes a long period of evolution which must have begun at a very early date. Let us further remember that we are clearly told each clan originally worshipped its own particular deity <sup>(1)</sup>.

We must also keep quite clear the distinction between the gods of the calendar and astrology on one side, and on the other the simple minded conceptions of the Mexican nation. We must not identify as a matter of course gods of the first kind with the homonymous deities of popular religion. The remarkable correspondence between the Mexican and Maya gods of the twenty-day cycle, is a proof of the very high antiquity of the priestly speculations <sup>(2)</sup>. The twenty-day cycle was doubtless preceded by an older ten-day period <sup>(3)</sup> the origin of which, perhaps a kind of early zodiac, cannot as yet be ascertained <sup>(4)</sup>. But I must refer to what will be said later on about the calendar.

It is out of the question to enter here into any de-

(1) Codex Zumarraga, cap. 1-10 ("Añales del Museo Nacional de Mexico," vol. ii).

(2) Seler, "Commentary to Codex Borgia," vol. i., p. 308 seqq.

(3) Seler, "Gesammelte Abhandlungen," vol. i., p. 782 and Commentary to Codex Vaticanus B., p. 245 seqq.

(4) Seler, "Commentary to the Aubin Tonalamatl," p. 6.

tails about the mythology: I must confine myself to generalities. I have already mentioned the great influence of the climate on religions, ideas and ceremonies, an influence which is self-evident in the eighteen annual feasts (1).

The latter may be divided into agricultural, astronomical and special feasts. Among the former are all those dedicated to the rain god Tlaloc and to the mountain deities Xipe and Cinteotl; they are of a purely agricultural nature and consist in prayers for rain, thanksgiving for rain, maize-sowing or maize-reaping feasts. The harvest-feasts were accompanied by banquets, games and dances; a close connection existed between harvest deities and the gods of *pulque* and lust. Indian corn being the fruit of the earth was considered as a son of the earth-goddess, who as a female was opposed to the male luminaries; every evening the Sun (Uitzilopochtli) was supposed to sleep with the Earth in the West. That is the reason why in so many legends the West is said to be the original birth-place (2), a part also played by the North, the cold country, where lives the god of the nether-regions who watches on the bones of the dead, the ancestors. Little confidence can therefore be laid on legends pretending that a tribe came from this or the other point of the compass.

The sun causes not only heat but also droughts and he can counterbalance the action of rain. He is therefore also entitled to receive prayers and offerings. The gods must be fed, the earth must drink; the

(1) Seler, "Die 18 Jahresfeste der Mexikaner" in the "Veröffentlichungen des königlichen Museums für Volkerkunde," vol. vi. (1899). Unfortunately the first five feasts only have as yet been published in the Mexican original, with a translation. But cf. Seler, "Gesammelte Abhandlungen," vol. i., pp. 145-151 and 706-711. The most important early authority is Sahagun.

(2) Seler, "Gesammelte Abhandlungen," vol. ii., p. 757.

most precious beverage is human blood, which can only be obtained from prisoners taken in war. Hence the divine nature of war and a close connection between warriors and earth-goddesses.

The Earth-goddess, as the mother of maize, is at the same time the woman  $\kappa\kappa\tau'\epsilon\zeta\omicron\gamma\acute{\iota}\nu$ . She patronizes female activity and owing to the peculiar coincidence between menstruation and the phases of the moon, she becomes a lunar deity. But as the earth, the dust is a symbol of filth, and the Earth-goddess is the goddess of filth, sin and carnal lust. The latter is connected with the gods of games and dances and with a special deity of lust who is the god of diseases, untimely births and twins. But as illness is a punishment of the gods, the attributions of the deity of lust coincide here with those of the great god Tezcatlipoca who sees, hears and punishes all men (1).

The relations between the Earth-goddess and the mythical birthplace in the West carry us back to the early Chichimec days, the days of the goddess *Itzpapalotl* (2) and of the old fire god *Ueueoteotl* (3). This brings us to speak of the hearth-fire and the goddess *Chantico* "In the house" (4).

The dualistic conception which regards heaven and earth as husband and wife has its echo in the very primitive legend which places in the thirteenth sky the original creator couple.

The Sun and Moon were, strange to say, supplanted by more modern deities, but the ruins of Teotihuacan

(1) W. Lehmann, "Zeitschrift für Ethn." 1905, pp. 849-871; Seler, Commentary to Codex Borgia, vol. ii., p. 96 seqq.

(2) "Historia de Colhuacan y de Mexico," i, § 3, and (in Lehmann's edition, "Journal de la Société des Américanistes," 1906), ii, §§ 64 and 66.

(3) *Ibid*, i., § 1-2.

(4) Seler, Commentary to Codex Vaticanus B., p. 273.

are there to testify to their early reputation (1). The usual term for god (*teotl*) is used for the Sun (*teotl-ác* "the Sun has gone down"), an evident and tacit acknowledgement of its divinity. Daily incense-offerings were made to the Sun at the four cardinal points.

Quetzalcouatl was doubtless in the origin a rain-god, a god of the damp tropical coast of the Mexican gulf (2), assimilated later on with other deities. He thus became the wind-god who prepares the way for rain (3). His name, derived from *quetzalli* "green feathers" and *couatl* "snake" is easily applied to rain (4). I have mentioned above the Huastec origin of his dress, originating in a region where the North-Eastern trade winds prevail. Nuñez de la Vega supplies us with the curious information that Cuchulchan (Quetzalcouatl) the corresponding Maya god is to be found in the place of the seventh sign in the "*repertorios mas generales*", i.e. the *tonalamatl* (5). But in the *Tonalamatl* the first day of the seventh thirteen-day week is called *ce quiauitl* "one rain" and its regent is Tlaloc.

In the legend of Quetzalcouatl, who disappears towards the East in the sea, the "Eastern sea," plays a consider

(1) Sahagun clearly mentions (x., 29 § 12) the Sun and Moon pyramids at Teotiuacan.

(2) According to Franc. Hernandez (Las Casas, "Hist. apolog." cap. 123) Cocolcan was "dios de las fiebras ó calenturas."

(3) Sahagun i, cap. v.

(4) In Codex Magliabecchi fol. 21 verso (published by the Duke de Loubat) Quetzalcouatl is called "amigo ó pariente... de Tlaloc." For the same reasons, the Tepictoton, an offering for fever and other diseases, is presented to Quetzalcouatl, as is to the rain god Tlaloc, to the water-goddess Chalchiuhtlicue and to mountains which stop the rain-clouds. Cf. Sahagun i, cap. 21 (Mexican text in Seler, "Veröff." i., 4, p. 173). On the feast Quauhtleua cf. Sahagun ii., cap. i. and Ap.

(5) Nuñez de la Vega, Const. Diocesan, ii., p. 132.

able part. In the *Lienzo de Jucutacato* the ancestors are said to be descended from a feathered snake <sup>(1)</sup>, which, born between *Chalchiuhapazco* <sup>(2)</sup> and *Chalchiuhcuyecan* (*i.e.* between the Eastern sea and the Vera-Cruz coast) is in my opinion a symbol of the sea itself.

The Olmeca-Uixtotin were called "sons of Quetzalcouatl" <sup>(3)</sup>, because of the god's connection with the fertile shores of the Gulf; along those shores came prehistoric Mexican elements, *i.e.* the true Toltecs <sup>(4)</sup>, and in historical days the commercial caravans <sup>(5)</sup> followed the same route. The direction of this route lying from West to East, parallel to the Sun's course, Quetzalcouatl was brought into relation with the moon and the planet Venus and this gave birth to new series of legends.

The circumstance that *Tezcatlipoca* "the mirror-youth", also called *Youalli éecatl* <sup>(6)</sup> "night and wind", is men-

(1) Seler, "Gesammelte Abhandlungen," iii., p. 47.

(2) According to the *Historia de Colhuacan y de Mexico* (published by W. Lehmann, "Journal de la Société des Américanistes," 1906), ii, § 30, Quetzalcouatl brings to Chalchiuhapazco the bone-powder for the creation of man. To the latter name ("The place of precious stone vases") corresponds in the *Popol Vuh* (Brasseur's edition pp. 2-4), the expressions *ah raxa lak*, *ah raxa tzel* "Lord of the green shell," "Lord of the green calabasse." This also designates him (Tepeu Gucumatz-Quetzalcouatl) clearly as the god of the tropical rain-coast of the Mexican gulf. His sea-shell ornaments also point to the sea-shore and his feather head-dress is in the style of the people of Quetzalapan (*i.e.* Tabasco). The idol of Cholula was adorned with sea-bird feathers (Duran 84, ii., pp. 119-120).

(3) Sahagun, x., 29, § 10.

(4) "Historia de Colhuacan y de Mexico," i., § 85.

(5) Sahagun, ix., cap. 2 seqq. Quetzalcouatl is the patron deity of merchants (Duran ii., pp. 120-121 and other authors).

(6) *Youalli éecatl* "Night and wind," or *opu* "the invisible" are also epithets of Quetzalcouatl (Sahagun x., 29, § 3). In the *Popol Vuh* (p. 246) we read: *Xavi xere Tohil u bi u c'abauil yaqui vinak Yolcuat Quitzalcuat u bi xka hach chila chu Tulan chi Zuyva* "Certainly Tohil ('Storm') is the name of the god of the Yaque (the advanced Toltecs), Yolcuat Quitzalcuat is his name, as we parted there in Tula in the West." Yolcuat may well here be short for *youalli éecatl*, a general epithet for "Divinity." Cf. Seler, "Veröffentlichungen des Königlichen Museums für Völkerkunde," vol. vi., p. 141.

tioned by the legends together with Quetzalcouatl, proves that his origin is of no mean antiquity. He was, according to Chimalpain, the god of "the Eastern" *teotl ixca*, of the *Nonoualca*, i.e. of the Tabasco coast. We must omit here the numerous other deities, even Yucatecùtli, the god of traders, with his interesting relation to the Maya countries <sup>(1)</sup>; we have still to examine the astronomical feasts.

The fifth annual feast, the Mexican new-year <sup>(2)</sup> *toxcatl* was celebrated at the date when the sun reached the zenith of the city. For the latitude 19°27' North this happened on the 9th May of the Julian calendar. This coincides with Pietro Martire's assertion <sup>(3)</sup> that the year began with the setting of the heliac pleiads. The latter took place at Mexico on the 21st of April (old style), and as the feast ended on the 9th of May, it must have begun precisely on the 21st of April. The astronomical importance of the feast was further emphasized by the renewal of fire, an event which symbolized the beginning of a new period.

The sun reaching again the zenith at the time of the 9th feast, we can explain why the 5th and 9th feasts are so much alike one another in the Codex Borbonicus. When he supplants the sun, Tezcatlipoca also passes from the North to the South of the zenith. The rain-god's feast *atamalqualitzi* was celebrated every eight years at the completion of every fifth Venus period <sup>(4)</sup>. The chief ceremony of the feast in which the *Maçateca* plucked snakes and toads from a pool of water, with their

(1) Cf. especially Seler, Commentary to Codex Borgia, vol. i., p. 321 seqq.

(2) Seler, "Veröffentlichungen" . . . etc., vol. vi., p. 153.

(3) Petrus Martyr, "De nuper sub Carolo repertis insulis" (Bale, 1524), p. 34. Cf. Seler, "Gesammelte Abhandlungen," i., pp. 704 and 180-181.

(4) Sahagun ii., Ap., § 7.

teeth, reminds one of the snake dances of the Arizona Moquis.

I will not insist upon the special annual feasts, but will now say a few words about the calendar, the corner-stone of which is a series of twenty days, to be met with not only in Mexico but throughout Central America and said to be still used in some parts of the land <sup>(1)</sup>. The names of these days coinciding in the Tzapotec language with the numerals, we may infer their very early and very extensive use among that nation.

Each day had a special sign. By combining these twenty signs with the numerals 1 to 13, was obtained a period of 260 days, the Mexican *tonalamatl* <sup>(2)</sup> or "book of day-signs." The latter is surely not an Aztec invention, but belongs to the old *Nahuatl* tribes and has come down from the Toltecs whose cradle <sup>(3)</sup> is to be sought for in the often mentioned Tabasco district which is surrounded by the Mexican, Mixteco-Tzapotec and Maya nations.

The *tonalamatl* is of doubtful origin, though it seems to correspond to a primitive period of some sort. It might have been a compromise, between a period of gestation

(1) A highly interesting list of the *naguales* corresponding to the 31 days of January has been published by Fr. Ant. de Fuentes y Guzman in his "Historia de Guatemala," published by J. Zaragoza, Madrid, 1883, vol. ii., p. 44. It is evidently the adaptation to our calendar of an old Indian list containing the 20 day-signs; it runs as follows: 1, León; 2, Culebra; 3, Piedra; 4, Lagasto; 5, Seyba; 6, Quetzal; 7, Palo; 8, Conejo; 9, Mecate; 10, Hoja; 11, Venado; 12, Guacamayo; 13, Flor; 14, Sapo; 15, Gusano; 16, Trozo; 17, Flecha; 18, Escoba; 19, Tigre; 20, Tototmoztle; 21, Flanta; 22, Chalchigit; 23, Cuervo; 24, Fuego; 25, Chuntan (que es pavo); 26, Bejuco; 27, Tacuatzin; 28, Huracán; 29, Sopilot (que es gallinazo); 30, Gavilán; 31, Murciélago.

(2) On the 20 day-signs and the Tonalamatl, cf. especially Seler, "Gesammelte Abhandlungen," i., pp. 417-503, 507-544 and 600-617; E. Förstemann, "Globus," vol. lxxvii., pp. 283-285, and vol. lxx., p. 20; Brinton, "The native calendar of Central America and Mexico" (Philadelphia, 1893).

(3) Seler, Comptes-rendus of the Seventh International Congress of Americanists, Berlin, pp. 734-735.



and a lunar calendar of 270 days or the length of nine lunar months (266 days) (1). The number 13 is possibly half a lunar month; this conjecture cannot be done away with without further discussion and it has recently found a new supporter in Ginzel (2). The "maternal" explanation of the tonalamatl is not only confirmed by the importance of the numeral 9, as already observed by de Jonghe (3), but also by the use made of this calendar. When a child was born the soothsayer examined the tonalamatl. The number and sign of the day enabled him to give a name to the child who remained for the rest of his life under the influence of the sign and week in which he was born; all this is well attested for the Tzapotec regions (4).

A comparison with the development of the calendar in other countries has led Ginzel to the following conclusions: the annual displacement of the annual fixed feasts, which followed of course the natural seasons, led soon to a lunar year of twelve months and later on to a vague year approaching still more the true solar year. This vague year of 360 days is still contained in the solar year of 365 days ( $18 \times 20 + 5 = 365$ ) (5).

(1) It is remarkable that in *T'otzil* (a Maya dialect) the word for month, *uh*, coincides very closely with the Maya word for "moon," *u*. Cf. Charencey (after P. Denis Pereyra), "Revue d'ethnographie," iii., p. 399.

(2) Cf. Friedrich Karl Ginzel, "Handbuch der mathematischen und technischen Chronologie. Das Zeitrechnungswesen der Völker," vol. i. (Leipzig, 1906, in-8), § 122, pp. 433-448 (Central America). The twelve synodical moon months have as yet been found only in Codex Vaticanus B, fol. 54, and in Codex Borgia, fol. 66, bottom. Cf. Selser, Commentary to Codex Borgia, vol. ii., pp. 225-229.

(3) Ed. de Jonghe, "Der altmexikanische Kalender" in "Zeitschrift für Ethnologie" (Berlin), v. xxxviii. (1906), pp. 485-512; cf. "Journal de la Société des Américanistes," new series, v. iii. (1906), pp. 197-227.

(4) Juan de Cordova, "Arte del idioma Zapoteco" (Nic. León's edition), p. 202 seqq.

(5) Evidence towards an early vague year of 360 days only may be derived from the interval of  $9 \times 20 = 180$  days between the two Maya feasts *Pax* and *Yaxkin*, and also from the analogy of the hieroglyphs for *Pax* and *tun*, a period of 360 days. Cf. Selser, "Gesammelte Abhandlungen," vol. i., pp. 703-705.

The great importance of the *tonalamatl* was the possibility it afforded to measure the parallel Venus and solar periods. These measurements soon led to the early knowledge that eight solar years of 365 days are exactly equal to five Venus periods of 584 days.

Only four of the twenty day-signs could fall on the first day of the solar year, only five on the first of a Venus period. Combined with the number thirteen, the twenty day signs gave a solar cycle of fifty-two years and a Venus cycle of sixty-five years. The sign of the first day of each solar year gave its name to the year; the four signs used in Mexico were *acatl* "reed," *techpatl* "flint," *calli* "house" and *tochtli* "rabbit" (1), with minor local variations in their order. The starting point of the Venus period was the first day of the *tonalamatl*. For instance the year 1 *acatl* began on the day 1 *acatl*, and in the same year, the Venus period began on the day 1 *cipactli* (2).

The new-year feast fell in the fifth twenty-day month *Toxcatl*. It is as yet uncertain whether the five intercalary days were added in before the feast of *Toxcatl* or at another date in the year (3).

De Jonghe denies that the Mexicans ever corrected in their calendar the fault resulting from the valuation of the solar year at 365 days, instead of 365 days and a fraction; but Seler's explanation of a passage in the Borgia codex seems quite convincing (4). In forty-two

(1) The years are calculated on exactly the same basis in the Codex Dresdensis and in the Maya inscriptions on the stelae of Copan and Palenque, etc., while the Codex Tro-Cortesianus shows a later stage of permutation, corresponding to the calendar described by Landa. Cf. Seler, "Gesammelte Abhandlungen," i., p. 587.

(2) From this date start in the Nuttall-Zouche codex, a number of calculations doubtless relating to the Venus periods.

(3) De Jonghe (l.c.) throws doubt on the intercalation of the five complementary days before *Toxcatl*. The Maya name *xul*, "end," for the last five days of the month, speaks in favour of this intercalation. Cf. Seler, "Gesammelte Abhandlungen," vol i., p. 703.

(4) Seler, Commentary to Codex Borgia, vol. ii., pp. 122-126.

years the error would have been of about ten days, so it seems *a priori* likely that the Mexicans must from time to time have corrected their calendar. If that had not been the case, the annual feasts which in the time of the Conquista were already out of their place in the year, would have been still far more displaced.

A further possibility is that the alleged date of the foundation of Mexico merely marks the starting point of a great calendar reform. Up to this date there is in the migration chronology an unmistakeable touch of conventionalism; but this chronology is beyond doubt the fruit of later speculations with little if any historical basis. On the other hand we can hardly believe that Mexico was founded only two centuries before its fall; everything speaks against it: the size of the town, the extent of its power, the height reached by its civilisation. Another impossibility, on the same grounds, is the period of only five centuries elapsed since the departure of the Mexican tribes from their primeval birth-place. A prudent criticism of the historical reports, as compared with archæological evidence will doubtless greatly help to control these erroneous data.

As regards synchronology, the Mexican calendar is well linked together for a short time with the Gregorian almanack (1), but we cannot say the same for the various Maya chronological systems.

The existence of the Venus periods discovered by Förstemann in the Dresden Maya manuscript, has also been ascertained by Seler in the Mexican documents of the Codex Borgia group; but the gods of the five periods in the Dresden codex are as yet unparalleled. A closer study of this arduous problem is much to be desired (2).

(1) Seler, "Gesammelte Abhandlungen," vol. i., p. 1, 7 seqq.

(2) Förstemann, "Kommentar zur Dresd. Mayahandschrift" (Dresden, 1901), p. 106 seqq.; Seler, "Gesammelte Abhandlungen," vol. i., pp. 618-667.

## VIII.

### HISTORICAL REMARKS.

It is yet too early to write a history of Mexico: the evidence of the picture-manuscripts and Spanish authors has by no means as yet been entirely sifted in a critical manner and archaeology has not supplied us yet with anything like sufficient data; finally a number of important chronological and synchronological problems remain to be solved.

Nothing is more misleading than the old schematized division of Mexican history in to three successive periods: Toltec, Chichimec and Aztec (1). Reality is seldom so simple.

The origin of the great migration currents, which ran through the whole American continent from the North to the South, will doubtless never be finally ascertained, as also the alleged chronological and geographical coincidences between the various migrations. Connections between the Mexicans and the Mound-builders are as yet in the realm of unsupported conjectures. The best thing under such circumstances is to confine ourselves to the study of the present occupants of the land. There is no doubt that the Mexicans were immigrants and well aware of it (2). It is possible that they came from the North,

(1) Bancroft, "Native races," vol. v. (1875).

(2) Chimalpain, Relac vii. According to him, the Mexicans came between the Tepaneca, Xochimilca, Acolhua, Chalca; cf. Cortes' letters, published by Gayangos, p. 86.

but it has never been conclusively demonstrated. On the contrary the close connection between Mexican civilization and the other civilizations of Central-America is perfectly established.

The Toltec problem is a difficult one. Even if we omit all the mythological matter concerning not only the Toltecs but also the god Quetzalcoatl, their remains an important substratum of historical fact which we cannot dismiss at a word as Brinton was inclined to do (1). The very difficulty of the question ought not to deter us from its study as it may give the key to a correct knowledge of the whole Mexican and Central-American world.

The Toltecs, as expressly stated by Sahagun (2), were a Nahuatl tribe, speaking therefore a language closely connected with Mexican. They belonged to an early stage of civilization, they spread their influence far and wide and their memory was preserved by a number of tribes who spoke a different language and had their own civilization.

To the Toltecs is generally ascribed the invention of hieroglyphics and the calendar. The Mexicans, Tzapotecs and Mayas had both, but in various forms and stages of development. Two explanations are possible: either the Mexicans and Mayas influenced one another through the intervening Tzapotecs or else the three nations learnt writing and the calendar from a third and older nation. And who could the latter be, if not the Toltecs?

Mexican legends tell us that the "wise men" *i. e.*

(1) Brinton, "Essays of an Americanist," pp. 83-100; "The American Race," p. 29. etc.

(2) Sahagun, x., 29, § 1: "Estos dichos Tultecas eran ladinos en la lengua mexicana, aunque no la hablaban tan perfectamente como ahora se usa."

the mythical Toltecs) <sup>1</sup> parted from the other tribes and went forth towards the East. After these are mentioned the first historical Toltecs, the inhabitants of Tollan <sup>2</sup> Tollanzinco and Xicotitlan. The expression *yaque* "they went forth" is also found in the Quiche legends who call these the "forth goers" *yaqui vinak*, and state that Quetzalcouatl was their god <sup>3</sup>. This evidently refers to Toltecs who went towards the East in prehistoric times.

Now, in Landa's narrative, the Maya hero Cuculcan, comes from the West. Further a Toltec influence is clearly to be observed in the buildings of Mayapan and Chichenitza, especially in the round towers of the Quetzalcouatl sanctuaries and in the typical snake-pillars which are also found at Tollan (Tula) <sup>4</sup>.

Quetzalcouatl appears in wall paintings at Mitla, the ruins, according to Torquemada, of temples built by the Toltecs; under the name of *Nacxit* (Mexican *Nacxitl*, *nauicxitl*) he plays an important part in the Cakchiquel myths.

The inhabitants of Cholula, where Quetzalcouatl was in particular honour and there still remain great ruins, were said to be descendants of the Toltecs, to whom Torquemada also ascribes the majestic pyramids of Teotiuacan. Various ancient records expressly attest the wide dispersion of Toltec influence both on the Atlantic and the Pacific coast.

The birth place of the Toltecs Huei-Tlapallan (or Huehue-Tlapallan) or Xalac ("on the shore") <sup>5</sup> is

(1) Sahagun, x., 29, § 12.

(2) Brinton's conjecture that *Tollan* is short for *Tonallan*, "Place of the sun," is absolutely unacceptable. (Cf. his "American hero myths," Philadelphia, 1882, p. 83.)

(3) Cf. *supra* p. 82, note 2.

(4) Selser, "Quetzalcouatl-Cuculcan in Yucatan" (Gesammelte Abhandlungen, vol. i., pp. 668-705).

(5) Ixtlilxochitl, "Historia Chichimeca," cap. 2, p. 27; "Relaciones hist." (Kingsborough, vol. ix.), f. 394.

doubtless to be identified with the Tlapallan of more recent narratives (*i.e.* the Tabasco district) and is never mentioned without the emphatic epithets of "great" or "ancient".

The list of early kings of Colhuacan, from whom according to Chimalpain was descended the royal Mexican dynasty, is identic with the list of the Tollan rulers (1). But we must not forget that besides the historical Colhuacan, there was a mythical place of the same name [Colhuacan-Mexico] and that all the Nahua nations, including the Mexicans, tried to make out some connection or other with alleged Toltec ancestors. Be it as it may, the Toltec problem promises to enter a new stage and we may now look hopefully forward to a final solution. The question is of high importance and the old fanciful ideas we had of this nation will have to give way before the results of scientific research.

The answer to this great problem will enable us to test the value of the value of the various migration legends. But alas, the history of Mexico before the Spanish conquest will always remain confined to a short lapse of years: the hieroglyphic documents only speak of centuries and we have before us a civilization the evolution of which may have occupied thousands of years.

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(1) Torquemada, 3, 7, vol. i., p. 254.







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